

No. 2013-1445

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IN THE  
**United States Court of Appeals**  
FOR THE FEDERAL CIRCUIT

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DATCARD SYSTEMS, INC.,

*Plaintiff-Appellant,*

v.

PACSGEAR, INC.,

*Defendant-Appellee.*

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APPEAL FROM THE UNITED STATES DISTRICT COURT  
FOR THE CENTRAL DISTRICT OF CALIFORNIA IN  
CASE NO. 10-CV-1288, SENIOR JUDGE MARIANA R. PFAELZER

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**NONCONFIDENTIAL JOINT APPENDIX**  
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PAUL A. STEWART

*Counsel of Record*

CRAIG S. SUMMERS

**KNOBBE, MARTENS, OLSON &  
BEAR, LLP**

2040 Main Street, 14<sup>th</sup> Floor

Irvine, CA 92614

(949) 760-0404

*Attorneys for Plaintiff-Appellant*

WILLMORE F. HOLBROW, III

*Counsel of Record*

DENNIS G. MARTIN

JAMES H. AHN

**BLAKELY SOKOLOFF TAYLOR  
ZAFMAN, LLP**

12400 Wilshire Boulevard, 7<sup>th</sup> Floor

Los Angeles, CA 90025

(310) 207-3800

*Attorneys for Defendant-Appellee*

November 8, 2013

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Confidential information of Pacsgear, Inc. has been deleted from this appendix. The confidential information generally relates to: (a) the functionality of the accused Pacsgear MediaWriter product, and (b) the release dates of certain MediaWriter upgrades.

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Craig S. Summers (SBN 108,688)  
craig.summers@kmob.com  
Paul A. Stewart (SBN 153,467)  
paul.stewart@kmob.com  
Brian C. Claassen (SBN 253,627)  
brian.claassen@kmob.com  
Bridget A. Smith (SBN 253,548)  
bridget.smith@kmob.com  
**KNÖBBE, MARTENS, OLSON & BEAR, LLP**  
2040 Main Street, 14<sup>th</sup> Floor  
Irvine, CA 92614  
Telephone: (949) 760-0404  
Facsimile: (949) 760-9502

Attorneys for Plaintiff/Counterdefendant  
**DATCARD SYSTEMS, INC.**

Willmore F. Holbrow, III (SBN 169688)  
Bill\_Holbrow@bstz.com  
Dennis G. Martin (SBN 54060)  
dennis\_martin@bstz.com  
**BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP**  
12400 Wilshire Boulevard, Seventh Floor  
Los Angeles, CA 90025  
Telephone: (310) 207-3800  
Facsimile: (310) 820-5988

Attorneys for Defendant/Counterclaimant  
**PACSGEAR, INC.**

IN THE UNITED STATES DISTRICT COURT  
FOR THE CENTRAL DISTRICT OF CALIFORNIA  
SOUTHERN DIVISION

DATCARD SYSTEMS, INC., a  
California corporation,

Plaintiff,

v.

PACSGEAR, INC., a California  
corporation,

Defendant.

AND RELATED COUNTERCLAIM

Civil Action No.  
SACV10-1288 MRP(VBKx)

**FINAL JUDGMENT UNDER  
RULE 54(b) OF THE FEDERAL  
RULES OF CIVIL PROCEDURE**

The Honorable Mariana R. Pfaelzer







/ / /



1           10. Judgment is entered in favor of Pacsgear on Pacsgear's  
2 counterclaim for a declaration of invalidity of the '422 Patent, based upon this  
3 Court's finding on summary judgment that the asserted claims of the '422  
4 Patent are invalid under 35 U.S.C. § 103.

5           11. As discussed above, there are two remaining undecided claims: (1)  
6 PacsGear's counterclaim for a declaration of invalidity of the '164 Patent, '597  
7 Patent, and '174 Patent, and (2) Pacsgear's counterclaim for a declaration of  
8 unenforceability of all five patents in suit due to inequitable conduct.

9           12. DatCard has stated that it plans to appeal some of this Court's  
10 summary judgment rulings. The parties agree to stay the proceedings on the  
11 above remaining counterclaims until after DatCard's appeal of the summary  
12 judgment ruling is decided. The Court concurs and hereby stays the  
13 proceedings on the two remaining claims identified above, pending appeal. Any  
14 motions for attorneys' fees are also stayed and need not be filed, pending  
15 appeal.

16           13. PacsGear, as prevailing party, is entitled to recover its costs,  
17 pursuant to Rule 54(d), in an amount to be determined.

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DATED: June 6, 2013

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Hon. Mariana R. Pfaelzer  
United States District Judge

15464482







The parties dispute the meaning of certain claim terms in the patents. In this Markman order, the Court construes those terms.

The purpose of claim construction is to determine the meaning and scope of the patent claims asserted to be infringed. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). Claim construction is a pure question of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996). For purposes of claim construction, the Court reviews both intrinsic and extrinsic evidence, placing emphasis on the former.

**i. Claim Language**

-2-



## ii. Specification

-3-







### A. Search Burn Patents



1       iii.     “automatically” (‘597, ‘174); and

2       iv.     whether the claim elements “printing” and “affixing” the label must  
3               occur sequentially (‘164).

4  
5       The Court next considers each dispute in turn:

6           i.     **“related medical image data” (‘164 patent), “additional medical**  
7               **data . . . related to the patient” (‘597 patent), “related data” (‘174**  
8               **patent)**

9       The relevant claim limitations for these disputed claim terms are:

10           (a) “a search module configured to search the database for *related medical*  
11               *image data* that is related to the selected medical image data . . . .” ‘164  
12               patent at col. 10 II. 53-55 (emphasis added);

13           (b) “automatically searching, based on the received request, a second  
14               computer database via a second database interface for *additional medical*  
15               *data* also *related* to the patient . . . .” ‘597 patent at col. 9 II. 34-36  
16               (emphasis added); and

17           (c) “a search module configured to automatically search the database for  
18               *related data* based on the user selection . . . .” ‘174 patent at col. 9 II. 24-  
19               47 (emphasis added).

20       The accused infringing product, MediaWriter version 3.0, allows the user to  
21       burn a radiologist’s text reports onto a CD along with selected images.<sup>3</sup> Not  
22       surprisingly, the parties dispute whether the claim terms above cover non-image  
23       data like text reports.  
24

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28       <sup>3</sup> Pacsgear’s Motion for Summary Judgment of Non-Infringement of the Search/Burn Patents [hereinafter  
“Mot.”] at 3 (ECF No. 67). Datcard’s opposition to the above motion is hereinafter referred to as “Opp.”  
ECF No. 87.



# A 11



Datcard argues that “related medical image data” means any kind of data (not just medical image data) that is related to the selected medical image data. Opp. at 21. This is incorrect because it fails to account for the modifying effect of “medical image” upon “data.” Pacsgear argues that “related medical image data” only refers to images. Mot. at 9. This too is incorrect because it would exclude non-image data formatted in standard medical imaging format. Some such non-image data include “patient demographics[] and exam information such as patient name, patient age, exam number, exam modality, exam machine name, and exam date.” ‘164 patent at col. 1 II. 48-55 (listing non-image DICOM compatible data types stored in the header preceding the exam images).

Under this rule, “[a] word or phrase used consistently throughout a claim should be interpreted consistently.” *Phonometrics, Inc. v. Northern Telecom Inc.*, 133 F.3d 1459, 1465 (Fed. Cir. 1998). Thus, the Court should interpret “related medical image data” consistently throughout Claim 9.

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(b) “additional [related] medical data,” ‘597 patent; and “related data” ‘174 patent

The relevant claim terms are:

- (1) “automatically searching, based on the received request, a second computer database via a second database interface for *additional medical data* also *related* to the patient . . . .” ‘597 patent at col. 9 II. 34-36 (emphasis added); and
- (2) “a search module configured to automatically search the database for *related data* based on the user selection . . . .” ‘174 patent at col. 9 II. 24-47 (emphasis added).

Claim terms like “related data” and “additional [related] medical data” have fewer modifiers for “data” than the claim term “related medical image data.” This might seem, at first blush, to support a broader construction for the former claim terms than the latter. Not surprisingly, the seemingly broader claim terms appear in continuation patents. “The name of the game is the claim” for parent patents and continuations alike.<sup>6</sup> But the Court must pay close attention to the specification when construing a claim term in a continuation.<sup>7</sup> The fundamental tension between the prohibition against importing limitations from the specification into the claims on the one hand, and construing claims in light of the specification on the other, is of special concern in the continuations context. Even in a regular setting, the

<sup>6</sup> Giles S. Rich, *The Extent of the Protection and Interpretation of Claims – American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499, 501 (1990).

<sup>7</sup> See Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63 (2004).



*Id.* at 1255, n.2 (emphasis added).



*Texas Digital*, a case criticized in *Phillips*, had listed two circumstances where the patent's specification and prosecution history must be consulted to determine if the patentee has used claim terms in a manner inconsistent with the ordinary meaning reflected in a dictionary definition: (1) where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning; and (2) if the inventor has disavowed or disclaimed scope of coverage by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. 415 F.3d at 1319 (citing *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002)).



To be sure, *Phillips* acknowledged “that the purpose underlying the *Texas Digital* line of cases – to avoid the danger of reading limitations from the specification into the claim – is sound.” *Id.* at 1323. But *Phillips* also acknowledged that “the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice.” *Id.* “[T]he line between construing terms and importing limitations can be discerned with reasonable certainty and



1 predictability *if the court's focus remains on understanding how a person of*  
2 *ordinary skill in the art would understand the claim terms.*" *Id.* (emphasis added).  
3  
4 "[T]he person of ordinary skill in the art is deemed to read the claim not only in the  
5 context of the particular claim in which the disputed term appears, but in the  
6 context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313.  
7  
8 *See also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005)  
9 ("We cannot look at the ordinary meaning of the term . . . *in a vacuum*. Rather, we  
10 must look at the ordinary meaning in the context of the written description and the  
11 prosecution history.").

13 Datcard seeks too broad a construction by interpreting "related data" to include  
14 "data in general." Opp. at 10. The three patents share a common specification. This  
15 specification only describes an invention where "data" in "related data" or  
16 "additional [related] medical data" is stored in a standard medical imaging format.  
17  
18 It is perfectly legitimate to ask for more real estate, so to speak, by drafting broader  
19 claim terms in a continuation application; so long as those newer and broader  
20 claims are moored to the specification. Construing "related data" and "additional  
21 [related] medical data" as referring to data in a standard medical imaging format is  
22 not an exercise in importing a limitation from a preferred embodiment in the  
23 specification. Instead, it is a grant of patent protection that ends at what the  
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1 patentee disclosed and described in the specification. It is a construction of the  
2 claims in light of the entire specification; not a construction of claims in a vacuum.

3 Pacsgear is also incorrect in limiting “related data” and “additional [related]  
4 medical data” to images. The patent specification states, “In addition to the  
5 examined images, *patient demographics[] and exam information* . . . can also be  
6 stored and retrieved in DICOM compatible data format . . . in the header of the file,  
7 followed by the exam images.” ‘164 patent col. 1 II. 58-52. These non-image data  
8 types, i.e., patient demographics and exam information, are as much part of the  
9 standard medical imaging standard as the images themselves. There is no basis for  
10 excluding these types of related data or additional related medical data from the  
11 claim scope. While Pacsgear attempts to exclude such non-image DICOM data  
12 from the claim scope, Datcard attempts to do the opposite, i.e., include non-image  
13 *non-DICOM* data such as the radiologist’s text reports within the claim scope.  
14 Under the Court’s construction, “related data” and “additional [related] medical  
15 data” exclude a radiologist’s text reports unless they are stored in a standard  
16 medical imaging format.

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23 ii. “database” (‘164, ‘174, ‘597);

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25 Claim 9 of the ‘164 patent, in relevant part, recites:

26 *a database* configured to store medical image data generated by the plurality  
27 of imaging modalities;  
28



1 a plurality of browsing terminals configured to receive a user selection that  
2 defines selected medical image data;

3 a search module configured to search *the database* for related medical image  
4 data that is related to the selected medical image data

5 Claim 1 of the '174 patent, in relevant part, recites:

6 *a database* configured store medical image data generated by the one or  
7 more imaging modalities;

8 a plurality of browsing terminals configured to receive a user selection that  
9 defines selected medical image data for a patient;

10 a search module configured to automatically search *the database* for related  
11 data based on user selection

12  
13 The parties dispute about the construction of the claim limitation “database.”

14 Pacsgear contends that database means “the electronic collection of image data  
15 stored in a way to allow for easy search and retrieval following the request of a  
16 user.” Mot. at 7. Datcard cites the dictionary for a definition of database as “a  
17 structured set of data held in a computer.” Opp. at 9.

18  
19  
20 In the context of the above claims, it is redundant to define database in terms of  
21 its contents. The claim language itself performs that task by requiring “a database”  
22 to be configured to store medical image data, which the Court previously construed  
23 as limited to data in a standard medical imaging format. While the Court agrees  
24 with Pacsgear that “*the database*” in the above claims plainly refers back to “a  
25 database” earlier in the same claim, it also agrees with Datcard that a database is  
26 merely “a structured set of data held in a computer.”  
27  
28



1 Claim 1 of the '597 patent, in relevant part, recites:

2 automatically searching a first computer *database* via a first database  
3 interface for a first set of medical image data related to the patient based on  
4 the received request;

5 automatically retrieving the first set of medical imaging data related to the  
6 patient;

7 automatically searching, based on the received request, a second computer  
8 *database* via a second database interface for additional medical data also  
9 related to the patient, wherein the second interface is different from the first  
10 interface

11 Unlike the '164 and '174 patents, where "the database" referred back to "a  
12 database," Claim 1 of the '597 patent defines two separate databases. Here, too, it  
13 is redundant to limit "database" by the type of content stored because the claims  
14 adequately do that by reciting the steps of searching the first database for medical  
15 image data and the second database for additional medical data. The Court has  
16 already construed "medical image data" and "additional medical data" to mean  
17 data in a standard medical imaging format. Consequently, again, the Court agrees  
18 with Datcard that a database is merely "a structured set of data held in a  
19 computer."  
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22  
23 **iii. "automatically" ('597, '174)**  
24

25 Claim 1 of the '597 patent is a multi-step method patent. The claim recites:

26 A computer-implemented method for automatically generating a portable  
27 computer-readable medium containing medical data related to a patient,  
28 comprising:



1 receiving, via computer-implemented interface a request for medical data  
2 related to the patient;

3 ***automatically*** searching a first computer database via a first database  
4 interface for a first set of medical imaging data related to the patient based  
5 on the received request;

6 ***automatically*** retrieving the first set of medical imaging data related to the  
7 patient;

8 ***automatically*** searching, based on the received request, a second computer  
9 database via a second database interface for additional medical data also  
10 related to the patient, wherein the second interface is different from the first  
11 interface;

12 ***automatically*** receiving the additional related medical data; and

13 ***automatically*** generating a portable computer-readable medium, at a  
14 production station, containing the first set of medical imaging data related to  
15 the patient and the additional related medical data, wherein the first set of  
16 medical imaging data is formatted in a standard medical imaging format  
17 used by a computer configured for viewing the medical imaging data.

18 ‘597 patent col. 9 II. 24-47 (Claim 1)

19 First, the claim requires receiving a request for medical data. Next, the claim  
20 requires automatic performance of a series of tasks (retrieving, searching,  
21 receiving, and generating). The parties dispute the meaning of “automatically.”  
22 According to Datcard, automatically means that “once initiated, the function is  
23 performed by a machine, without the need for manually performing the function.”  
24 Opp. at 11. Given that “automatically” appears in several recited steps, Datcard’s  
25 definition must be applied to *each* step. Datcard is effectively construing  
26 “automatically” as “once [*each step*] is initiated, the function is performed by a  
27  
28



1 machine, without the need for manually performing the function.” But that is not a  
2 satisfactory interpretation of the claim language because the “receiving” limitation  
3 lacks an “automatically” qualifier despite the fact that once a user initiates the  
4 receiving step by submitting a request for medical data, the receiving function is  
5 performed by a machine, without the need for manually performing the function.  
6

7  
8 In the specification, the patentee compares and contrasts two disclosed  
9 embodiments – one with the “automatically” feature with one without. The  
10 embodiment without the “automatically” feature states, “The user is then asked in  
11 step 180 if he/she desires to find related data of that patient for comparative study.  
12 If the user answers yes, the application server 110 then searches for related data.”  
13  
14 ‘164 patent at col. 8 II. 37-41; and “[s]till referring to FIG. 5, the user is then  
15 prompted to select all or some of the related data from the list of found related data  
16 for production, in step 184.” ‘164 patent at col. 8 II. 54-56. By contrast, the  
17  
18 embodiment with the “automatically” feature states, “In another embodiment, once  
19 the user has selected a patient/exam combination, the application server 110  
20 automatically searches for related data *without asking for user direction*,” ‘164  
21 patent at col. 8 II. 46-49, and “In another embodiment, all found related data are  
22 automatically selected by the application server 110 for production, *without*  
23 *prompting for user selection.*”  
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1 “Automatically,” in the context of the claim language and in light of the  
2 specification, means performing the claim steps beginning with “automatically”  
3 *without* first asking for user selection or direction for *each* step. Mot. at 17.

4  
5 **iv. whether the claim elements “printing” and “affixing” the label**  
6 **must occur sequentially (‘164).**

7 Claim 16 recites “printing a label using the production station, wherein the label  
8 includes identifying information associated with the selected medical image data;  
9 and affixing the label to the data storage medium using the production station.”  
10 Opp. at 22. “The MediaWriter . . . uses a CD Burner with an ink jet system that  
11 quickly and directly places information on the CD.” Mot. at 14. Pacsgear construes  
12 Claim 16 as requiring printing to take place before affixing. *Id.* (arguing non-  
13 infringement because Pacsgear’s products do not first print, *then* affix the label to  
14 the CD). But “[u]nless the steps of a method actually recite an order, the steps are  
15 not ordinarily construed to require one.” *Interactive Gift Express, Inc. v.*  
16 *Compuserve, Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001). While some order is  
17 inherent in certain subsets of the claim steps (e.g., receiving data before storing it,  
18 searching data before recording it, etc.), Claim 16 does not recite any order of  
19 performance for the steps. Instead, the claim recites “printing . . . and affixing.”  
20 ‘164 patent at col. 11 II. 47-52.

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22 The Court finds that printing and affixing are not sequential operations.

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i. “a computer-implemented interface configured to receive two or more requests for production of stored medical data related to the first patient”

ii. “an identification specific to the computer-readable medium”

<sup>8</sup> Datcard's motion is hereinafter referred to as "Mot."



-24-



Datcard argues that “[i]f the requested medical data exceeds the storage capacity of a single disc, a set of discs is a suitable portable digital recording medium.” Mot. at 22. That may be so, but the specification is void of any reference to multiple CDs being used to store one image because of size constraints. The patent neither describes a multiple-CD-based solution to the size-constraint problem, nor evidences the patentee’s possession of such an invention at the time of filing. As a technical matter, it is just as plausible to have unique identification numbers for multiple discs for the same job (with a numerical suffix, for example,



1 indicating the disc number for the same job), as it is to have a unique identifier  
2 specific to a set of discs. Given the claim language, and in light of the void in the  
3 specification for this issue, the appropriate construction for “computer readable  
4 medium,” therefore, is limited to one compact disc. Accordingly, the claim term  
5 “an identification specific to the computer readable medium” refers to a unique  
6 identification for each instance of the computer-readable medium (e.g., each CD).  
7  
8

### 9 **C. Timeout Patent**

10 The Timeout patent is U.S. Patent No. 7,801,422 (filed Jun. 5, 2009) (“the ‘422  
11 patent”), entitled “System and Method for Producing Medical Image Data onto  
12 Portable Digital Recording Media.” The parties dispute the meaning of some claim  
13 terms in Claims 1 and 8 of the ‘422 patent. The Court discusses each claim in turn.  
14  
15

#### 16 **i. Claim 1**

17 Claim 1 of the Timeout patent, with the point of contention bolded, states:  
18

19 A method of automatically producing medical image data and related data  
20 on an optical storage medium upon expiration of a timeout period, the  
21 method comprising:

22 ***detecting whether a server has changed within a timeout period after***  
23 ***receiving medical image data or related data*** from a modality and  
24 resetting the timeout period when the change is detected; and

25 automatically producing an optical storage medium comprising  
26 selected medical image data and related data from the server based on  
27 when the timeout period has expired and recording on the optical  
28 storage medium program code that, when executed, allows viewing of  
the selected medical image data, wherein the medical image data is



1 formatted in a standard medical imaging format used by a computer  
2 configured for viewing the medical image data.

3 ‘422 patent, col. 9 II. 15-32.

4 Before commencing a comparative study of the parties’ diverging  
5 contentions regarding the meaning of the bolded claim phrase, the Court introduces  
6 two concepts to aid the analysis: (1) the time of detection; and (2) the range of  
7 detection. The time of detection refers to the discrete point in time when the system  
8 performs the detecting step. The range of detection refers to the time interval for  
9 which detection takes place. These are fundamentally different ideas. An analogy  
10 helps to define the concepts and draw out the distinction. Consider the year-to-date  
11 gain of a stock, where the stock price is checked at the end of the first quarter.  
12 Here, the time of detection is April 1. The range of detection for the year-to-date  
13 gain is the three-month period between January 1 and March 31.  
14

15 Returning to the case at bar, the disputed claim phrase is “detecting whether  
16 a server has changed within a timeout period after receiving medical image data or  
17 related data.” Pacsgear’s proposed construction conflates the concepts of time and  
18 range of detection. DatCard’s proposed construction is that whereas the time of  
19 detection is *after* the expiry of the timeout interval, the range is *before*. The Court  
20 reviews the claim language and specification to determine the appropriate time of  
21 detection and range of detection for the detecting step.  
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*FIG. 3*

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graph TD; 126[YES] --> 127[TIME-STAMP START OF CHANGE]; 127 --> 128[WAIT FOR AN INTERVAL]; 128 --> 130{DATABASE STILL CHANGING?}; 130 -- YES --> 128; 130 -- NO --> 132[SEND CHANGED DATA TO];
```

Flowchart illustrating a process (FIG. 3):

- Start (YES) leads to a process block: TIME-STAMP START OF CHANGE.
- From there, the flow goes to a process block: WAIT FOR AN INTERVAL.
- Next is a decision diamond: DATABASE STILL CHANGING?.
- If the answer is YES, the flow loops back to the WAIT FOR AN INTERVAL block.
- If the answer is NO, the flow proceeds to a process block: SEND CHANGED DATA TO.

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1 The detecting step 130 in Figure 3 entitled “Database Still Changing?”  
2 occurs *after* step 128 entitled “Wait for an Interval.” The specification provides  
3 further confirmation that the time of detection is *after* the timeout period. “[U]pon  
4 observing a change in the image server database 202, ‘[t]he application server 110  
5 then proceeds to step 128 and waits for an interval, typically 35 to 65 seconds.  
6 After the interval, the application server 110 checks whether the image server  
7 database 202 is still changing, in step 130.’” Mot. at 2 (citing the ‘422 patent  
8 specification, col. 5:28-33) (emphasis).  
9  
10  
11

12 PacsGear’s argument in its motion that “Claim 1 requires the detection to  
13 take place before the time interval expires” might be logically consistent with the  
14 claim language, but wholly excludes the preferred embodiment in the ‘422  
15 specification. “A claim construction that excludes the preferred embodiment ‘is  
16 rarely, if ever, correct and would require highly persuasive evidentiary support.’”  
17  
18 *Adams Respiratory Therapeutics, Inc. v. Perrigo Co.*, 616 F.3d 1283, 1290 (Fed.  
19 Cir. 2010) (quoting *Vitronics Corp. v. Conceptiontronic Inc.*, 90 F.3d 1576, 1583-84  
20 (Fed. Cir. 1996)). PacsGear has failed to provide the requisite “highly persuasive  
21 evidentiary support.”  
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24

25 In light of Figure 3 and the cited language in the specification, the Court  
26 finds that the time of detection is *after* the expiry of the timeout interval. “There is  
27 sometimes a fine line between reading a claim in light of the specification, and  
28



### (b) Range of detection

The present-continuous tense of the phrase “Database Still Changing” in Figure 3 might suggest a detection mechanism for post-timeout changes in the database. But that phrase does not exist in isolation; it appears in a sequential flowchart immediately *after* step 128 entitled “Wait for an Interval.” The claim language, “detecting whether a server has changed,” maps to “Database Still Changing?” Thus, Pacsgear’s argument mischaracterizes the patented claim by



**(c) “timeout period”**



Thus, the Court construes “timeout period” as a predefined period of time.

Claim 8 of the Timeout patent, with the point of contention bolded, states:

wherein the *timer resets when the application server detects an additional change in the database before a timeout interval*, measured from the timestamp, elapses; and



1 wherein the timer times out when the application server detects no  
2 additional change in the database after the *timeout interval*, measured  
3 from the timestamp, elapses; and

4 a production station coupled to the application server and configured  
5 to automatically produce an optical storage medium comprising one  
6 or more selected medical images from the database based on when the  
7 timer times out, wherein the medical image data is formatted in a  
8 standard medical imaging format used by a computer configured for  
9 viewing the medical image data.

10 The parties dispute the meaning of the phrase “wherein the timer resets  
11 when the application server detects an additional change in the database before a  
12 timeout interval.” As with Claim 1, the parties’ dispute is over the time and range  
13 of detection referred to by the “detects” step. Pacsgear’s error lies in its conflation  
14 of the concepts of time and range of detection. The Court construes the disputed  
15 terms in Claim 8 in a manner consistent with its construction for Claim 1. Datcard  
16 proposes that the word “timer” refers to “a device which keeps track of time.” It is  
17 not clear whether Pacsgear disputes this position. The Court does not need to  
18 construe claim language not in dispute.

19 Thus, consistent with its construction for Claim 1, the Court finds that the  
20 time of detection for the “detects” step is *after* the expiry of the timeout interval,  
21 whereas the range for detection is *before*.

22 //

23 //

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#### IV. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed claim terms in this suit. The constructions shall govern all proceedings in this case.

Search and Burn claims	Claim Construction
“related medical image data” (‘164), “additional medical data . . . related to the patient” (‘597), “related data” (‘174)	Data that is: (1) formatted in a standard medical imaging format; and (2) related to the selected medical imaging data.  Such data types include images, patient demographics, and exam information such as patient name, age, exam number, exam modality, exam machine name, and exam date because all of the above are in the standard medical imaging format (in the header or the image).  Data types not formatted in the standard medical imaging format are outside the scope of these terms.
“database” (‘164, ‘174, ‘597)	A structured set of data held in a computer.
“automatically” (‘597, ‘174)	Performing the corresponding claim step without first asking for user selection or direction for the step.
Whether the claim elements “printing” and “affixing” the label must occur sequentially (‘164)	No.
HIPAA claims	Claim Construction
“a computer-implemented interface configured to receive two or more requests for production of stored	A system configured to receive two or more requests. This claim does not refer to user action.



IT IS SO ORDERED.

Mariana R. Pfaltz

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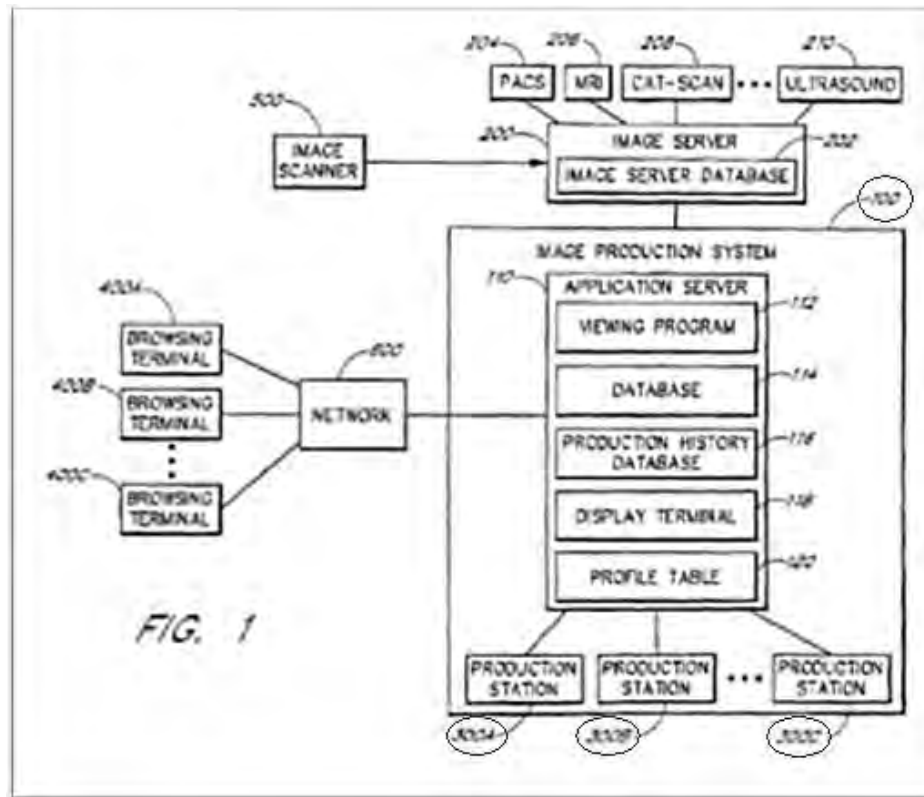
DatCard Systems, Inc. (“DatCard”) has sued Pacsgear, Inc. (“Pacsgear”) for infringement of U.S. Patent No. 7,801,422 (filed Jun. 5, 2009), entitled “System and Method for Producing Medical Image Data onto Portable Digital Recording Media.” Pacsgear has moved for summary judgment for invalidity and noninfringement. The Court determines that the ‘422 patent claims are obvious in light of the prior art. But a genuine issue of material fact remains regarding



noninfringement. Consequently, Pacsgear's motion for summary judgment is granted as to invalidity but denied as to noninfringement.

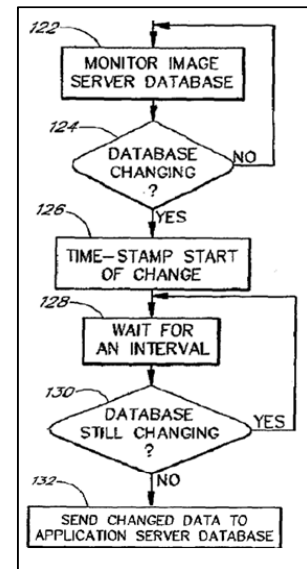
## II. Technical Background

The medical imaging industry historically used film for the storage, transmission, and retrieval of medical images. Eventually, digital images replaced film. Medical images are now stored in a special digital format called DICOM on servers known as PACS. Figure 1 illustrates an image production system comprising an application server (110) and portable production stations (the 300 series).





DICOM images can be distributed using the internet. But the internet implicates privacy and security interests. Also, transmitting voluminous medical image data strains bandwidth limitations. Portable digital recording medium such as compact discs (“CDs”) present a useful alternative. Transmitting MRI images from an MRI machine to a CD requires *burning* data on the CD. For some types of CDs, data can only be burned once. So it is important to verify that *all* of the desired image data has successfully transmitted to the CD before initiating the burning process.









‘422 at 9:16-31. The “automatically producing” step (138 in Fig. 3) is not depicted in the portion of Fig. 3 extracted above.

### III. Legal Principles

The Court shall grant summary judgment if: (1) the movant shows that there is no genuine dispute as to any material fact; and (2) the movant is entitled to judgment as a matter of law. FED.R.CIV.P. 56(c); *see Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986).

## B. Obviousness



“[A] district court can properly grant, as a matter of law, a motion for summary judgment on patent invalidity when the factual inquiries into obviousness present no genuine issue of material facts.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991).

Infringement, either literal or under the doctrine of equivalents, is a question of fact. *Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009). “It is . . . well settled that each element of a claim is material and essential, and that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in



1 the accused device.” *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir.  
2 1985). “There can be no infringement as a matter of law if a claim limitation is  
3 totally missing from the accused device.” *London v. Carson Pirie Scott & Co.*, 946  
4 F.2d 1534, 1539 (Fed. Cir. 1991).

6 To find infringement under the doctrine of equivalents, any differences between  
7 the claimed invention and the accused product must be insubstantial. *Graver Tank*  
8 *& Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950). One way of proving  
9 infringement under the doctrine of equivalents is to show, for each claim  
10 limitation, that the accused product “performs substantially the same function in  
11 substantially the same way with substantially the same result as each claim  
12 limitation of the patented product.” *Crown Packaging Tech., Inc. v. Rexam*  
13 *Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009). This too is a question of  
14 fact. *Id.*; *Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298,  
15 1313 (Fed. Cir. 2003).

20 To prevail on a summary judgment motion of noninfringement, the defendant  
21 must establish that after resolving reasonable factual inferences in favor of the  
22 patentee, no reasonable jury could find infringement. *See IMS Tech., Inc. v. Haas*  
23 *Automation, Inc.*, 206 F.3d 1422, 1429 (Fed. Cir. 2000).

26 //

27 //







1 *see also Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 Fed. Cir.  
 2 1988 (“A statement in a patent that something is in the prior art is binding on the  
 3 applicant and patentee for determinations of . . . obviousness.”).

4  
 5 Claim 1 is a method claim with two steps: (1) “detecting whether a server has  
 6 changed within a timeout period . . . [and] . . . resetting the timeout period when  
 7 the change is detected . . . ;” and (2) “automatically producing an optical storage  
 8 medium . . . .” In the AESD, as shown below, the patentee stated that Samari-  
 9 Kermani disclosed step two. This statement is binding on the patentee for the  
 10 obviousness determination.  
 11  
 12

### 13 Identification of Claim Limitations Disclosed by References

#### 14 Samari-Kermani

Claim 1	
A method of automatically producing medical image data and related data on an optical storage medium upon expiration of a timeout period, the system comprising:	
detecting whether a server has changed within a timeout period after receiving medical image data or related data from a modality and resetting the timeout period when the change is detected; and	<b>Not disclosed.</b>
automatically producing an optical storage medium comprising selected medical image data and related data from the server <b>based on when the timeout period has expired</b> and recording on the optical storage medium program code that, when executed, allows viewing of the selected medical image data.	Samari-Kermani at [57], ¶¶ 36, 39, 43–53, & 57.

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 23 The second claim step, as highlighted above, is “based on when [a] timeout  
 24 period has expired.” To examine the extent to which it would have been obvious  
 25 for an artisan armed with the Samari-Kermani reference to perform the first step, it  
 26  
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 28



is worth investigating Samari-Kermani's disclosure of timers for accomplishing medical image transmission and delivery.<sup>1</sup>

### Timer 1: Samari-Kermani ¶36, Fig. 3

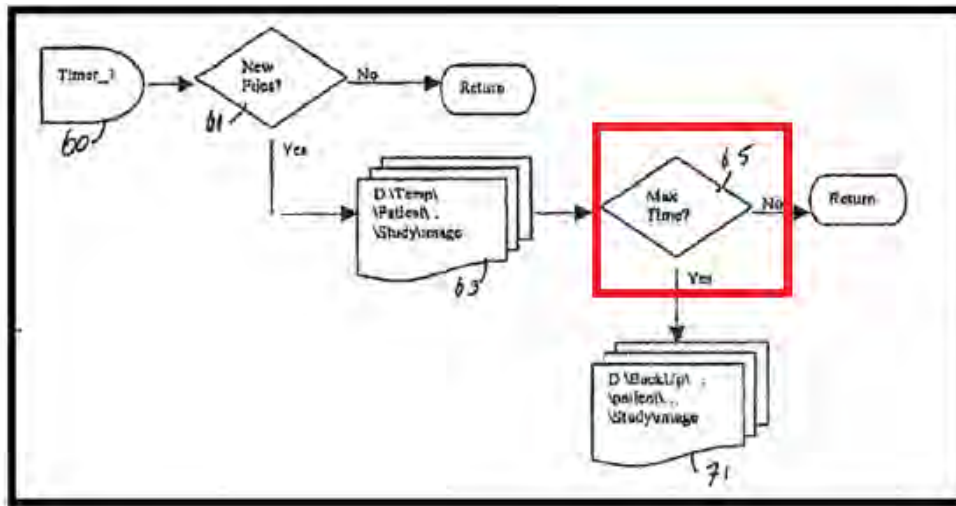


Fig 3

Timer 1 in Samari-Kermani (60 above) is a configurable timer with a default value of 1 (one) second. It checks for incoming new files. Upon receipt, it stores the new files in a temporary directory (illustrated as “D\Temp\” in 63 below). Then, once per second, it checks the temporary database for any changes in the previous thirty<sup>2</sup> seconds. If no new files have arrived in the previous thirty seconds, the file extension for the corresponding patient's timestamp file is changed from

<sup>1</sup> As DatCard's expert, Jack Goldberg, stated in his rebuttal report, “The Samari publication includes four timers that perform four functions: Timer\_1 is used to check for incoming new files in an incoming directory, Timer\_2 is used to move pending jobs in queue to be processed, Timer\_3 is used to check the end of the job, and Timer\_4 is used to start the backup process.”

<sup>2</sup> . . . or “Max Time” . . .



The Samari-Kermani reference thus discloses an invention involving *detecting whether subdirectories within a temporary folder have changed within a trailing time period*. By comparison, the Claim 1 and its dependent claims in the ‘422 patent require “*detecting whether a server has changed within a timeout period after receiving medical image data or related data from a modality*.” These are very similar disclosures. The difference between monitoring the claimed “server” (as Claim 1 of the ‘422 patent requires) versus a “temporary folder” (as in Samari-Kermani) is not significant. Perhaps a medical image server (such as PACS) is a larger entity than a folder within a server. But the distinction, to the extent there is any for purposes of obviousness, is trivial. As such, Samari-Kermani discloses “detecting whether a server has changed within a timeout period after receiving . . . data . . . .”

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-11-



The Court next analyzes whether Timer 1 and Fig. 3 of the Samari-Kermani reference disclose or render obvious “resetting the timeout period when the change is detected” step. Preliminarily, the Court construes the term “resetting.” In the ‘422 specification, “resetting” corresponds to the *loop* in Fig. 3 (shown below)

which *connects* “Database Still

Changing? Yes” *back* to “Wait for an

Interval.” In this context, resetting

cannot mean interrupting a timeout

period *before or during* the “wait for an

interval” because “a claim interpretation

that excludes a preferred embodiment

from the scope of the claim is rarely, if ever, correct.” *On-Line Techs., Inc. v.*

*Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed. Cir. 2004).

Instead, in light of the specification, “resetting” refers to finishing the “wait for an

interval,” or timeout period, and restarting another “wait for an interval” step. This

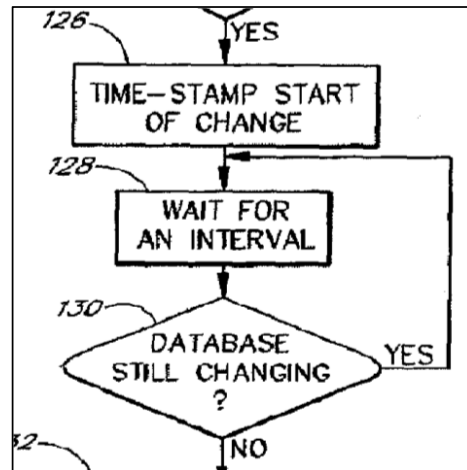
comports with the Court’s claim construction finding that the time of detection is

*after* the expiry of the timeout period. ECF No. 145 at 35.

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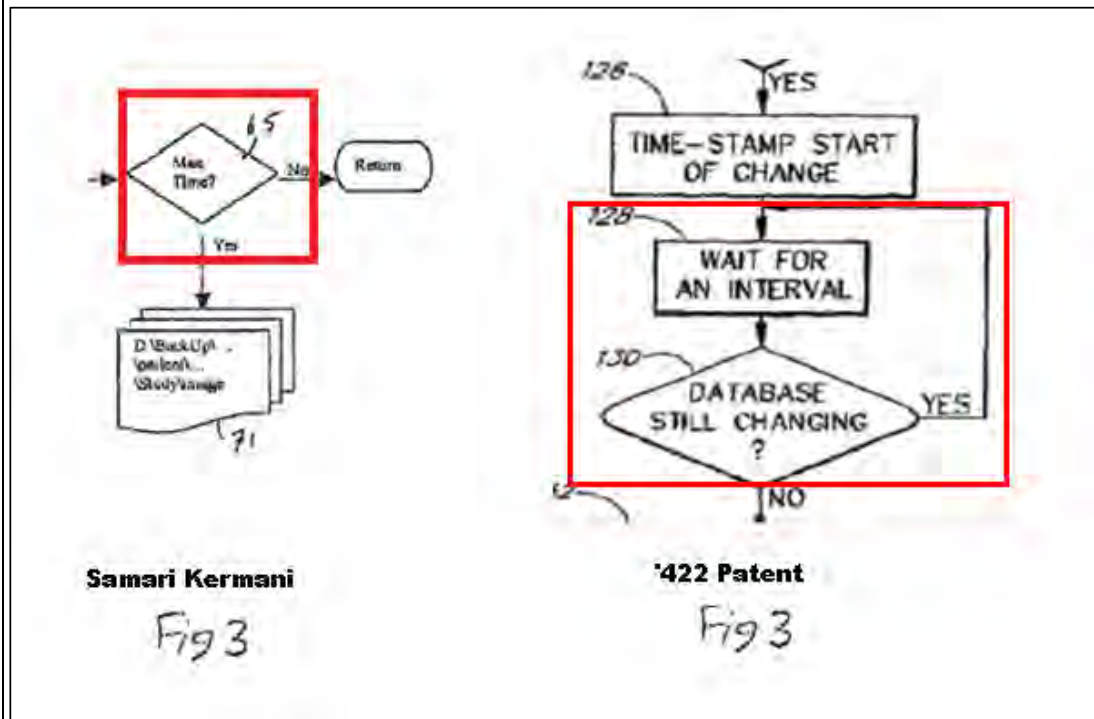
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that



As depicted below, “Max Time? → No” in Samari-Kermani’s Fig. 3 corresponds to “Database Still Changing? → Yes” in ‘422 Fig. 3. Instead of looping back and waiting for another interval, as in ‘422 Fig. 3, the process in “Max Time? No” simply culminates in “Return,” effectively ending the sequence.

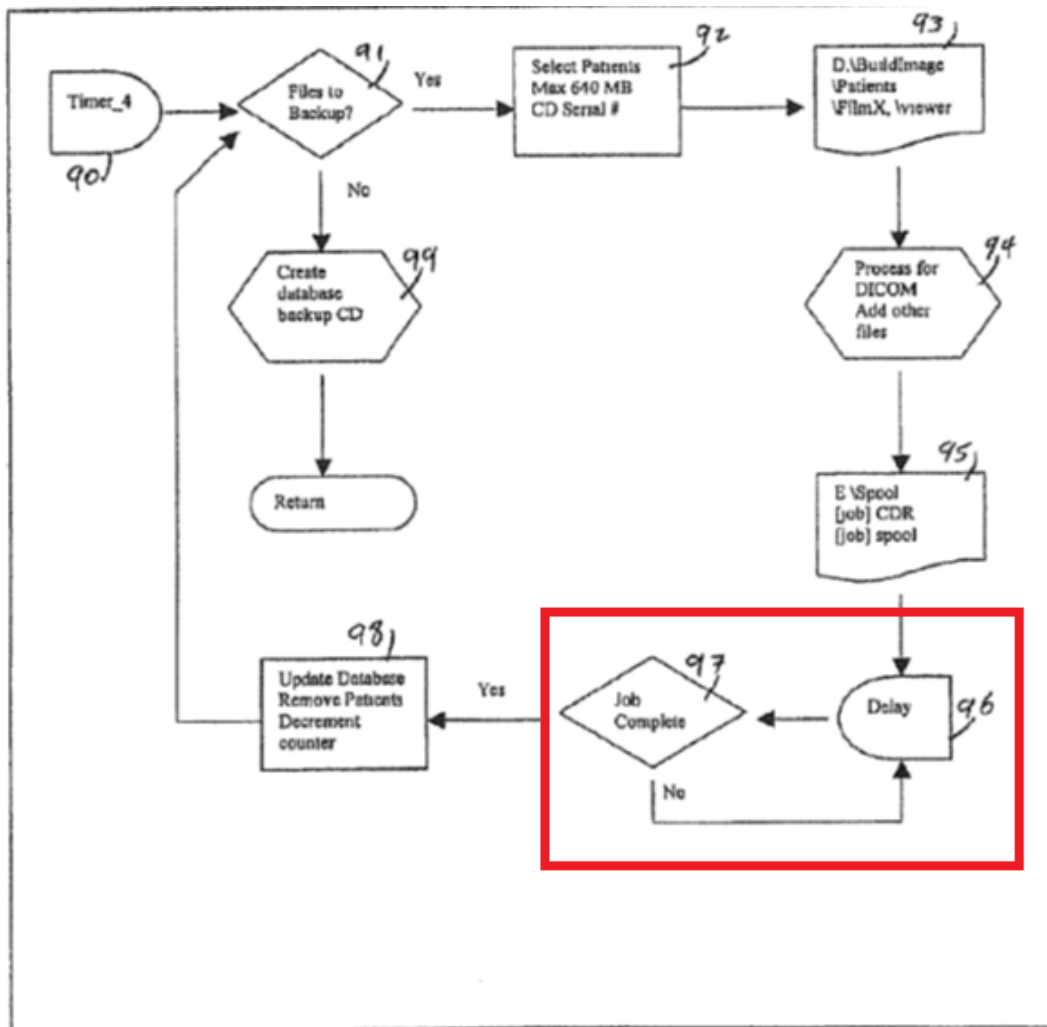


The side-by-side schematics from the prior art reference (left) and the description of the claimed invention (right) illustrate the marginal nature of the differences between the two designs. Instead of checking once per second for changes spanning the trailing thirty seconds as in the Samari-Kermani reference (pictured on the left), the claimed invention (pictured on the right) checks for changes once every thirty seconds by employing a looped delay device. The use of a looped



1 delay device represents the only missing claim element in Samari-Kermani. As  
 2 such, it does not render the '422 patent claims nonobvious. Indeed, Samari-  
 3 Kermani itself discloses the use of a looped delay device to accomplish the  
 4 different goal of backing up data in Timer 4 (reproduced below).  
 5

6 **Timer 4: Samari-Kermani, Fig. 6**





1 Delay loop 96 is highlighted in the Timer 4 schematic as shown in Fig. 6 of  
2 Samari-Kermani. Like an alarm clock, timer 4 is programmed to “go off” at a  
3 particular time on a particular day each week to execute the backup process.  
4  
5 Samari-Kermani states, “[o]nce a backup job is created, the software then goes  
6 through a timed delay 96 waiting for the job to finish by checking for job complete  
7 97.” Samari-Kermani at ¶63. “Once done, the database is updated with the patient  
8 and study information of all the patients on that CD and the CD unique serial  
9 number in Update Database step 98. The process starts anew by checking to see if  
10 there are any more files to back up 91.” *Id.* Delay timer 96 in Timer 4, unlike  
11 Timer 1, is not directed to checking for changes in a database. Nonetheless, it  
12 discloses, within the same prior art reference, the use of a looped delay, i.e.,  
13 recursively waiting for an interval until the performance of a task, here the  
14 completion of a job. Armed with the Samari-Kermani reference’s disclosure of  
15 looped delays in Timer 4, it is only a matter of changing the end goal to be  
16 performed from “detecting job completion” to “detecting changes in database” to  
17 arrive at the claimed invention. And Samari-Kermani already discloses a method  
18 of detecting changes in temporary subdirectories, although that method does not  
19 employ looped delays.

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22 In the context of the ‘422 patent, the Court agrees with Pacsgear that the  
23 ordinarily skilled artisan is someone with a Bachelor’s Degree in Electrical  
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1 Engineering or Computer Science or the equivalent derived from several years of  
2 work experience with programming, databases, and storage devices. *See* Mot. at 1.  
3  
4 Such an artisan, armed with the Samari-Kermani application, would find that  
5 taking the delay timer 96 from the Backup Timer 4 and inserting it into the  
6 schematic for Timer 1 presents an obvious redesign. If anything, Fig. 6 is sufficient  
7 proof that an artisan could accomplish the goals of Timer 1 with a Delay timer on a  
8 loop because it accomplishes the identical goal albeit for the different purpose of  
9 determining job completion. As a technical matter, checking for job completion is  
10 not *more* amenable to techniques involving delayed loops than checking for  
11 database changes. Devising a looped delay is simply an alternate way of  
12 accomplishing the goal of monitoring for changes.  
13  
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16 Dr. Goldberg testified on behalf of DatCard that basic computer timers neither  
17 taught nor suggested the claimed elements. Neither lack of teaching nor lack of  
18 suggestion is dispositive for the obviousness inquiry after *KSR*. 550 U.S. at 406.  
19 “An obviousness determination is not the result of a rigid formula disassociated  
20 from the consideration of the facts of a case. Indeed, the common sense of those  
21 skilled in the art demonstrates why some combinations would have been obvious  
22 where others would not.” *Western Union Co. v. Moneygram Payment Sys., Inc.*,  
23 626 F.3d 1361, 1369-70 (Fed. Cir. 2010). In the context of Claim 1 as a whole, it  
24 would have been obvious for an artisan armed with Samari-Kermani to implement  
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The Court next examines secondary considerations – an important safeguard against hindsight bias. DatCard’s expert, Dr. Rowberg, attributes limited sales of its product by characterizing the medical profession as notoriously cautious in adopting new and unproven products. “Despite these obstacles, DatCard was still able to sell over a hundred units in a short period of time.” Rowberg at 67. To show a nexus between DatCard’s sales success and the ‘422 patent claims, Dr. Rowberg highlights the failure of Codonics – a product that lacked the ability to record a viewer on a removable medium – an ability recited in Claim 1. *Id.* The Court finds that these and the other cited secondary considerations (settlement with Codonics, evidence of copying, satisfaction of a long-felt need) are unpersuasive. The differences between Samari-Kermani’s teachings on the one hand and Claim 1 of the ‘422 patent on the other are trivial. To the extent that any of the above considerations are attributable to the differences between Samari-Kermani and Claim 1 of the ‘422 patent, the nexus between such differences and the submitted secondary considerations is insignificant and fails to overcome the clear and convincing evidence of obviousness.



1 After analyzing the secondary considerations, the Court finds that Samarai-  
2 Kermani by itself presents clear and convincing evidence that Claim 1 of the '422  
3 patent is obvious. The only other independent claim, i.e., Claim 8, recites two  
4 limitations not admitted as disclosed in the AESD: (1) "wherein the timer resets  
5 when the application server detects an additional change in the database before a  
6 timeout interval, measured from the timestamp, elapses;" and (2) "wherein the  
7 timer times out when the application server detects no additional change in the  
8 database after the timeout interval, measured from the timestamp, elapses." These  
9 claim limitations are simply system equivalents to the "resetting the timeout period  
10 when the change is detected" limitation of method claim 1. As such, claim 8 as a  
11 whole is obvious for the same reasons as claim 1. The '422 applicant admitted in  
12 the AESD that all other asserted dependent claim limitations were disclosed in  
13 Samari-Kermani. None of the dependent claims, taken as a whole, are non-obvious  
14 in light of the Samari-Kermani disclosures.

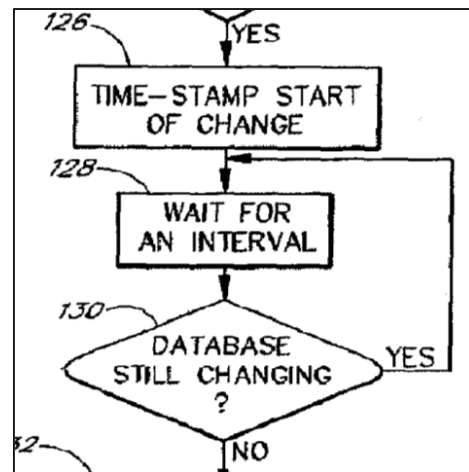
15 The Court has homed in on the difference between the '422 claims and the  
16 Samari-Kermani reference and finds that each asserted claimed invention as a  
17 whole would have been obvious before the effective filing date of the claimed  
18 invention to a person having ordinary skill in the art. As such, the Court grants  
19 Pacsgear's summary judgment motion of invalidity under 35 U.S.C. § 103 as to all  
20 asserted claims.



**B. The Court denies Pacsgear's summary judgment motion of noninfringement**

Pacsgear argues that “[b]ecause the detection in the MediaWriter occurs after the timer expires and the maximum-time number is preset (e.g., 30) and cannot be reset, the MediaWriter does not infringe Claim 1 literally or under the doctrine of equivalents.” Mot. at 12. This notion of “interrupt and restart” contradicts the Court’s claim construction of “reset” as “finish and restart” as well as its construction that the time of detection is *after* expiry of the timeout period.

Pacsgear’s construction excludes Fig. 3 of the ‘422 patent (shown here) which performs the “Database Still Changing?” inquiry only *after* the expiry of the “Wait for an Interval” period. Thus, the fact that m\_RxStudytimer (the timer in MediaWriter) *expires* before the subroutine is initiated is not dispositive.



As for Claim 8, Pacsgear argues that m\_RxStudytimer is initiated when the MediaWriter application turns on. Claim 8 requires “an application server . . . configured to create a timestamp when the application server detects a change in the database, *thereby initiating a timer.*” As DatCard points out, Pacsgear’s expert, Mr. Jestice, admitted at a deposition that he had not done anything to determine



1 that the timer was started when the MediaWriter was turned on. *See* Ian Jestice  
2 Deposition at 210:7-10 (“Q. Is there anything in the code that was provided to you  
3 that indicated where the local archive manager was instantiated? A. I haven’t  
4 looked.”). As such, there is a genuine issue of material fact about *when* the timer is  
5 initiated.  
6

7  
8 Finally, Pacsgear argues that its MediaWriter timer does not reset – instead it  
9 restarts automatically *regardless* of whether a change in the database is detected.  
10  
11 “As the MediaWriter doesn’t detect anything before the timer initiates the  
12 maximum-time/comparison subroutine, it can’t detect any additional change in the  
13 database *before* the timeout interval . . . .” Mot. at 13. Again, the Court has  
14 construed “reset” to mean “finish and restart,” not “pause and restart.” Detection  
15 does not take place *before* the timeout period expires, i.e., “Wait for an Interval.”  
16  
17 As such, Pacsgear’s noninfringement arguments do not merit summary judgment.  
18  
19 Pacsgear argues that because “MediaWriter doesn’t infringe the only two asserted  
20 independent claims of the ‘422 patent, it also doesn’t infringe the asserted  
21 dependent claims, namely Claims 2, 3, 6, 9, 10, and 13.” Mot. at 14. Consequently,  
22 the Court’s finding of noninfringement as to the independent claims applies to the  
23 dependent claims.  
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**V. Conclusion**

The Court determines that the '422 patent claims are obvious in light of the Samari-Kermani reference. Genuine issues of material fact remain regarding noninfringement. Consequently, Pacsgear's motion for summary judgment is granted as to invalidity but denied as to noninfringement. IT IS SO ORDERED.

DATED: March 12, 2013



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Hon. Mariana R. Pfaelzer  
United States District Judge







1 contributory infringement. As to the '157 patent, DatCard argues that Pacsgear  
2 directly infringes Claims 7 and 12. For the reasons provided below, the Court  
3 denies DatCard's motion of summary judgment of infringement for the '174  
4 patent. The Court grants DatCard's motion for summary judgment of infringement  
5 for the '157 patent as to certain versions of MediaWriter (versions 4.0 and earlier)  
6 but denies the motion as to versions 4.0.1 and beyond.  
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## 9 II. LEGAL PRINCIPLES

### 10 A. Summary Judgment

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12 The Court shall grant summary judgment if: (1) the movant shows that there is  
13 no genuine dispute as to any material fact; and (2) the movant is entitled to  
14 judgment as a matter of law. Fed. Rule Civ. Proc. 56(c); *see Celotex Corp. v.*  
15 *Catrett*, 477 U.S. 317, 322 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242  
16 (1986). The Court must: (1) identify material facts by reference to the governing  
17 substantive law, *Anderson*, 477 U.S. at 248; (2) disregard irrelevant or unnecessary  
18 factual disputes, *id.*; and (3) view facts and draw reasonable inferences in favor of  
19 the nonmoving party, *Scott v. Harris*, 550 U.S. 372 (2007).  
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### 23 B. Infringement

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25 Determining patent infringement is a two-step process. *Hearing Components,*  
26 *Inc. v. Shure Inc.*, 600 F.3d 1357, 1370 (Fed. Cir. 2010). First, the asserted patent  
27 claim must be construed as a matter of law. *Id.* Second, the properly construed  
28







1 radiologists as “textual reports”). On this ground alone, DatCard fails to establish  
2 its entitlement to summary judgment of infringement.

3 Furthermore, DatCard argues, “Specifically, *when the ‘Include Reports’*  
4 *button is selected*, a Media Writer uses a unique identification number associated  
5 with the selected medical image data to search the local drive for related reports  
6 with a matching identification number.” *Id.* (citing Ex. 2 at 34:8-35:3, 38:25-39:12,  
7 Ex 23 at 58) (emphasis added). But the Court has construed “automatically” to  
8 mean “*without* user selection or direction.” ECF No. 135 at 34. By conceding that  
9 the MediaWriter’s search module solicits user selection of the “Include Reports”  
10 button, DatCard undercuts its own argument. On this separate ground alone,  
11 DatCard fails to establish its entitlement to summary judgment of infringement.

12 Given the missing claim limitations in the accused product, the MediaWriter,  
13 DatCard is not entitled to summary judgment of infringement as a matter of law.  
14 Consequently, the Court denies DatCard’s motion of summary judgment of  
15 infringement as to Claims 1-4 and 7 of the ’174 patent with respect to Pacsgear’s  
16 MediaWriter product.

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24 **B. The Court Denies in Part and Grants in Part DatCard’s Motion for  
Summary Judgment of Infringement as to the ’157 Patent**

25 In its motion for summary judgment of infringement, DatCard argues that the  
26 accused product, Pacsgear’s MediaWriter, satisfies each element of claims 7 and  
27 12 of the ’157 patent. Both claims require “a system . . . comprising . . . an image  
28



1 production module that is configured . . . to automatically transmit . . . audit data . .  
2 . wherein the audit data comprises at least *an identification specific to the*  
3 *computer-readable medium . . .*’ 157 at col. 10 II. 12-34, 50 (emphasis added).  
4  
5 The Court has previously construed “an identification specific to the computer-  
6 readable medium” to mean “[a] unique identification for each instance of the  
7 computer-readable medium (e.g. each CD).” ECF No. 145 at 35.

9       Certain versions of MediaWriter (versions 4.0.1 and later) lack a unique  
10 identification for each instance of the computer-readable medium, e.g., each CD.  
11  
12 These MediaWriter versions feature an identification called “Job ID.” But “Job  
13 ID” is not unique to each CD. Consequently, DatCard is not entitled to summary  
14 judgment of infringement as to MediaWriter versions 4.0.1 and beyond. Other  
15 versions of MediaWriter (versions 4.0 and earlier) feature an identification called  
16 “disc ID.” Disc IDs are unique for each CD and therefore constitute “an  
17 identification specific to the computer-readable medium.” Pacsgear does not  
18 dispute that the disc ID satisfies the appropriate construction of this limitation.  
19  
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22 Opp. at 19 n.13.

23       “Whenever a patentee with the burden of proof seeks summary judgment of  
24 infringement, it must make a prima facie showing of infringement as to each  
25 accused device before the burden shifts to the accused infringer to offer contrary  
26 evidence.” *L & W, Inc. v. Shertech, Inc.*, 471 F.3d 1311, 1318 (Fed. Cir. 2006). No  
27  
28



1 genuine issues of material fact remain as to all other claim limitations for Claims 7  
2 and 12 of the '157 patent with respect to versions 4.0 and earlier of MediaWriter  
3 featuring disc IDs. *See* Mot. at 17-25. Because the Court finds that DatCard has  
4 made its prima facie showing of infringement, the burden shifts to Pacsgear to  
5 offer contrary evidence – which Pacsgear has failed to do.  
6  
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8       Consequently, DatCard has proven by a preponderance of the evidence that  
9 each claim limitation of Claims 7 and 12 of the '157 patent is found in  
10 MediaWriter versions 4.0 and earlier. Thus, DatCard is entitled to summary  
11 judgment of infringement of Claims 7 and 12 of the '157 patent with respect to  
12 MediaWriter versions 4.0 and earlier. The Court notes that it has decided, in a  
13 separate order, that Claims 7 and 12 of the '157 patent are obvious. *See* ECF No.  
14 74 (Pacsgear's motion for summary judgment of obviousness-based invalidity).  
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**IV. CONCLUSION**

The Court denies DatCard's motion of summary judgment of infringement as to Claims 1-4 and 7 of the '174 patent with respect to Pacsgear's MediaWriter product. The Court denies DatCard's motion for summary judgment of infringement as to Claims 7 and 12 of the '157 patent with respect to certain versions of the MediaWriter (versions 4.0.1 and later). The Court grants DatCard's motion for summary judgment of infringement as to Claims 7 and 12 of the '157 patent with respect to other versions of the MediaWriter (versions 4.0 and earlier). But Claims 7 and 12 are invalid for obviousness. *See* ECF No. 74 (order pending).

**IT IS SO ORDERED.**

DATED: April 01, 2013



Hon. Mariana R. Pfaelzer  
*United States District Judge*



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DATCARD SYSTEM, INC., a  
California corporation

V.

Defendant.

## Order Re Pacsgear’s Motion for Summary Judgment of Invalidity of “Search/Burn” and “HIPAA” Patents

DatCard System, Inc. (“DatCard”) has sued Pacsgear, Inc. (“Pacsgear”) for infringing U.S. Patent Nos. 7,302,164 (“164 patent”), 7,783,174 (“174 patent”), 7,729,597 (“597 patent”) (collectively the “Search/Burn” patents), and 7,734,157 (“HIPAA patent”). The Court finds that the HIPAA patent is obvious under 35 U.S.C. § 103. However, Pacsgear has failed to submit clear and convincing evidence as to the obviousness of the Search/Burn patents.



## II. Legal Principles

### A. Summary Judgment

The Court shall grant summary judgment if: (1) the movant shows that there is no genuine dispute as to any material fact; and (2) the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); *see Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986).

The Court must: (1) identify material facts by reference to the governing substantive law, *Anderson*, 477 U.S. at 248; (2) disregard irrelevant or unnecessary factual disputes, *id.*; and (3) view facts and draw reasonable inferences in favor of the nonmoving party, *Scott v. Harris*, 550 U.S. 372 (2007).

The Court cannot grant summary judgment if the dispute about a material fact is such that a reasonable jury could return a verdict for the nonmoving party. *Id.* Faced with a properly supported summary judgment, the nonmoving party may not rest upon mere allegations or denials of its pleading but must set forth specific facts showing a genuine issue for trial. *Id.* “Where the record taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no genuine issue for trial.” *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986).

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**B. Obviousness**

A patent claim is obvious when the differences between the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art . . . .” 35 U.S.C. § 103. The ultimate determination of whether an invention would have been obvious at the time the invention was made is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations of nonobviousness. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007) (citing *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17-18 (1966)). The presence or absence of a motivation to combine references in an obviousness determination is also a pure question of fact. *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000).

“[A] district court can properly grant, as a matter of law, a motion for summary judgment on patent invalidity when the factual inquiries into obviousness present no genuine issue of material facts.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991).

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1 along with viewing software. The Sorna reference is an advertisement for Sorna  
2 Corp.'s FilmX-I product. This product connects to a user's DICOM network,  
3 receives medical images, and burns them on up to four CD-Rs along with viewing  
4 software. Mot. at 11. The Samari-Kermani application discloses details of FilmX-I,  
5 including a system for recording X-Rays, CT scans, MRI's and other images along  
6 with viewing software onto CDs, an audit log, a timeout methodology, and  
7 automatic placing patient/study information on the label of the CDs. *Id.* at 12.

8 The VEPRO reference allows a user to select studies from different archives  
9 and burns those studies originating from multiple modalities on a CD-R. *Id.*  
10 Viewing software is copied on the CD to allow patients to view images on a  
11 general purpose computer. *Id.* A CD label is also created automatically by the  
12 system and the user may modify the patient name and other information designed  
13 to appear on the label. *Id.* The Seshadri reference discusses a software program for  
14 automatically locating and sending images related to a recent study using a rule-  
15 based method. Finally, the De la Huerga reference teaches a software system  
16 designed to retrieve related materials having a variety of formats, including  
17 DICOM, from multiple databases in a hospital environment using multiple  
18 workstations. These materials are burned onto CDs.

19 //

20 //



**b. The differences between the prior art and the claims at issue**

The Green Report, Ex. H, submitted by Pacsgear, contains a chart illustrating the presence of every claim limitation of Claim 9 of the '164 patent in the prior art. DatCard argues that individual pieces of prior art lack certain claim limitations. Opp. at 9 (arguing that Ratib lacks plurality of browsing terminals, utilizing multiple workstations, production station, and a search module for related medical image data); *id.* at 11 (arguing that Heartlab lacks a plurality of browsing terminals configured to receive a user selection that defines selected medical image data, a search module for related medical image data, and a production station); *id.* at 11-12 (arguing that Sorna ad lacks plurality of browsing terminals and search module for related medical image data); *id.* at 12 (arguing that Vepro lacks plurality of browsing terminals); *id.* (arguing that Seshadri and de la Huerga lack the claimed search module).

The corpus of prior art lacks an express disclosure of: (1) a plurality of browsing terminals and workstations, (2) a search module for related data, and (3) a production station. Arguably, one or more of the above are highly *suggested* in the prior art. But they are not clearly present. But that is not fatal to the obviousness analysis. Common sense can provide a reason to combine the teachings of the various references *and* to supply the missing pieces. Furthermore, an explicit teaching, suggestion, or motivation to combine the various references is







## 2. Legal Determination of Obviousness

Again, Pacsgear does not need to cite any explicit teaching, suggestion, or motivation in the prior art to combine the various references and/or to fill any gaps in the prior art, to the extent such gaps exist. But what Pacsgear *does* need to put forth – to overcome the presumptive non-obviousness of Claim 9 – is a *reason* to combine references at the critical date and/or a *reason* to add elements to the prior art. Pacsgear has, at its disposal, the use of *common sense* in this analysis. But mere recitation of the phrase “common sense” will not do. Pacsgear must articulate its common sense theory and express *why* common sense would render the patented claim obvious.

Pacsgear argues that “[i]f we look at the inventors’ options to accomplish each function, it is undeniable they were obvious,” Mot. at 5, and then cites the limited number of available choices for each function. The flaw with this argument is that it assumes that the PHOSITA would have an awareness of the problem solved by the invention. Often, the inventive contribution lies in defining the problem in a new revelatory way. Once the problem is defined, the solution might well be obvious; but the problem remains non-obvious. If courts invalidated patents simply because the problems described in the specifications bore obvious solutions, a significant percentage of existing patents would vanish. Such an analysis almost *invites* hindsight bias. An important check to hindsight bias is assessing patents not



1 only for the solutions they teach, but also for the problems that the solutions are  
2 directed toward.

3 Pacsgear's showing that the added features in the claimed inventions fail to  
4 yield unexpected results does not suffice to render Claim 9 obvious, although such  
5 evidence is highly probative. Pacsgear has not submitted evidence of the extent of  
6 the design need or market pressure which would have provided the PHOSITA with  
7 a blueprint of the problem to be solved. The patent cannot provide this blueprint.  
8 DatCard's expert, Dr. Rowberg cited the expense of processing and storing film,  
9 the various logistical problems associated with retrieving film jackets. Importantly,  
10 Dr. Rowberg testified that "[d]espite these recognized problems, *hospitals stuck*  
11 *with the film-based distribution system.*" Opp. at 21. Hospitals which switched to  
12 CDs still relied on technicians who manually burned images to CDs. *Id.* These  
13 systems were labor intensive and crude. Dr. Rowberg's citation of industry inertia  
14 is evidence that at the time of Mr. Wright's invention, the industry was slow to  
15 respond to this long-felt need. Inertia in an industry suggests headwinds facing  
16 innovators in that space. Pacsgear, in this instance, bears the burden to show, by  
17 clear and convincing evidence, that any such headwinds were mild enough to  
18 render Mr. Wright's invention obvious. This, Pacsgear has failed to do.

19 Pacsgear's rebuttal of DatCard's secondary considerations is inadequate.  
20 Pacsgear responds to DatCard's evidence of commercial success by vague  
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1 challenges to DatCard's expert's definition of the relevant market. Rep. at 7-8.  
2 Pacsgear cites a market survey listing fifty (50) PACS sellers. *Id.* The *number* of  
3 competitors distributing non-infringing PACS systems is not persuasive without  
4 additional facts demonstrating their success. As such, Pacsgear has failed to  
5 present clear and convincing evidence of obviousness.  
6

7  
8 Claims in the later Search/Burn patents are refinements of the '164 claims. The  
9 '597 claims search and retrieve selected and related data through two separate  
10 interfaces, whereas the '174 claims search and retrieve selected and related data  
11 from one database but may originate from a single modality. Pacsgear has failed to  
12 demonstrate the obviousness of the basic invention claimed in the '164 patent. The  
13 Court finds that Claim 9 of the '164 patent is non-obvious. The analysis is identical  
14 to claims 10-13, 15-17, and the continuation patents ('597 Cls. 1, 6, '174 Cls. 1, 8).  
15  
16

17  
18 The Court finds that Pacsgear has failed to submit clear and convincing  
19 evidence of obviousness as to the Search/Burn claims.  
20

## 21 **B. HIPAA Patent**

22 The prior art references of the Heartlab DICOMView Enterprise System, the  
23 Ratib Article, and Mehta, disclose the first two limitations of Claim 1 of the  
24 HIPAA patent. Mot. at 20. The Court finds that these references "receive, via a  
25 computer-implemented interface from a requester, one or more requests for  
26 production of stored medical data related to the first patient; and for each request  
27  
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1 for production of stored medical data related to the first patient: producing the  
2 portable computer readable medium containing the requested medical data related  
3 to the first patient, wherein the requested medical data comprises medical image  
4 data formatted in a standard medical imaging format used by a computer  
5 configured for viewing the medical image data.” HIPAA patent, Cl. 1. The  
6 missing element is automatically transmitting audit data specific to the computer-  
7 readable medium, where such identification includes an identification of the  
8 requester of the data, the patient, and an identifier specific to the computer-  
9 readable medium, wherein the audit data is for at least one audit record in the  
10 plurality of audit records in the audit database.

11  
12 “Keeping paper records of filmed medical images was standard practice for  
13 decades prior to the claimed invention. Co-inventor Chet LaGuardia testified that  
14 the information stored by DatCard’s patented device was essentially the same  
15 information that had been kept in paper format for years at every hospital he had  
16 ever worked in his twenty years as a radiology technician.” Mot. at 21. The  
17 transition from analog to digital in the medical imaging industry provides a  
18 significant motivation to implement a similar transition for the task of auditing.  
19 Thus, this industry transition itself provided the blueprint for the problem to be  
20 solved by the PHOSITA. Indeed, Dr. Rowberg agreed, when asked, that the  
21 PHOSITA would have naturally shifted away from paper logs to electronic logs.



Each patent claim, as a whole, amounts to nothing more an *electronic implementation* of the previously manual task of keeping track of information pertaining to medical images. The electronic implementation of this widespread task does not deserve patent protection unless there is something inventive about the implementation itself. But here, no technical difficulty is surmounted. No hurdle is overcome. Names of specific identifiers do not render the accompanying claims non-obvious. Finally, none of the secondary considerations raised by DatCard appear to address the HIPAA patent claims specifically. As such, common sense suffices as the source of clear and convincing evidence that the invention claimed in the HIPAA patent is obvious.



**IV. Conclusion**

For the above reasons, the Court finds that Pacsgear has failed to meet its burden of proof that the Search/Burn claims are invalid as obvious. But the Court finds that the HIPAA claims are obvious. As such, the HIPAA claims are invalid under 35 U.S.C. § 103.

IT IS SO ORDERED.

DATED: April 1, 2013



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Hon. Mariana R. Pfaelzer  
United States District Judge







### A. Summary Judgment

The Court shall grant summary judgment if: (1) the movant shows that there is no genuine dispute as to any material fact; and (2) the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); *see Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986).

The Court must: (1) identify material facts by reference to the governing substantive law, *Anderson*, 477 U.S. at 248; (2) disregard irrelevant or unnecessary factual disputes, *id.*; and (3) view facts and draw reasonable inferences in favor of the nonmoving party, *Scott v. Harris*, 550 U.S. 372 (2007).

The Court cannot grant summary judgment if the dispute about a material fact is such that a reasonable jury could return a verdict for the nonmoving party. *Id.*

Faced with a properly supported summary judgment motion, the nonmoving party may not rest upon mere allegations or denials of its pleading but must set forth specific facts showing a genuine issue for trial. *Id.* “Where the record taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no genuine issue for trial.” *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986).



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Starting with version 3.0, the MediaWriter’s search module began including diagnostic reports related to selected images. Ex. 258, Cavanaugh Dec., ¶¶2-17. These reports are not formatted in any standard medical imaging format. They are merely textual data. *See Opp.* at 4 (describing diagnostic reports as “textual data”). As such, they fall outside the scope of the asserted claims. The MediaWriter does not search for any other data formatted in a standard medical imaging format. The end result of executing a MediaWriter search is not substantially the same as the end result of the search module claimed in the patents. The MediaWriter search procures data in a textual format. The claimed search modules are directed to procuring related data in a standard medical imaging format. On the facts presented, no reasonable jury could deem textual data as equivalent to data formatted in a standard medical imaging format.

The MediaWriter searches for diagnostic reports. These reports are stored in a textual format – not a standard medical imaging format. In light of the specification, the Court has construed the terms “related medical image data”







(VBK<sub>x</sub>), **APPEAL**, **CLOSED**, DISCOVERY, PROTORD, RELATED-G

**UNITED STATES DISTRICT COURT for the CENTRAL DISTRICT OF CALIFORNIA**  
**(Southern Division - Santa Ana)**  
**CIVIL DOCKET FOR CASE #: 8:10-cv-01288-MRP-VBK**

DatCard Systems Inc v. PacsGear Inc  
Assigned to: Judge Mariana R. Pfaelzer  
Referred to: Magistrate Judge Victor B. Kenton  
Related Case: [8:10-cv-01287-DOC-VBK](#)  
Case in other court: Federal Circuit, 13-01445  
Cause: 35:271 Patent Infringement

Date Filed: 08/23/2010  
Date Terminated: 04/01/2013  
Jury Demand: Both  
Nature of Suit: 830 Patent  
Jurisdiction: Federal Question

## Plaintiff

**DatCard Systems Inc**  
*a California corporation*

represented by **Brian Christopher Claassen**  
Knobbe Martens Olson and Bear  
2040 Main Street 14th Floor  
Irvine, CA 92614  
949-760-0404  
Email: [brian.claassen@kmob.com](mailto:brian.claassen@kmob.com)  
***ATTORNEY TO BE NOTICED***

**Bridget Anne Smith**  
Knobbe Martens Olson and Bear LLP  
2040 Main Street 14th Floor  
Irvine, CA 92614  
949-760-0404  
Fax: 949-760-9502  
Email: [bridget.smith@kmob.com](mailto:bridget.smith@kmob.com)  
**ATTORNEY TO BE NOTICED**

**Craig S Summers**  
Knobbe Martens Olson and Bear LLP  
2040 Main Street 14th Floor  
Irvine, CA 92614  
949-760-0404  
Fax: 949-760-9502  
Email: craig.summers@kmob.com  
**ATTORNEY TO BE NOTICED**

**David H Chan**  
Knobbe Martens Olson and Bear  
2040 Main Street, 14th Floor  
Irvine, CA 92614  
949-760-0404  
*TERMINATED: 02/16/2012*  
*ATTORNEY TO BE NOTICED*

**Paul A Stewart**  
Knobbe Martens Olson and Bear LLP



2040 Main Street 14th Floor  
Irvine, CA 92614  
949-760-0404  
Fax: 949-760-9502  
Email: 2pas@knobbe.com  
**ATTORNEY TO BE NOTICED**

V.

**Defendant**

**PacsGear Inc**  
*a California corporation*

represented by **Dennis G Martin**  
Blakely Sokoloff Taylor and Zafman LLP  
12400 Wilshire Boulevard 7th Floor  
Los Angeles, CA 90025  
310-207-3800  
Fax: 310-820-5988  
Email: dennis\_martin@bstz.com  
**ATTORNEY TO BE NOTICED**

**Willmore F Holbrow , III**  
Blakely Sokoloff Taylor and Zafman LLP  
12400 Wilshire Boulevard Suite 700  
Los Angeles, CA 90025  
310-207-3800  
Fax: 310-820-5988  
Email: Bill\_Holbrow@bstz.com  
***ATTORNEY TO BE NOTICED***

Date Filed	#	Docket Text
08/23/2010	<a href="#"><u>1</u></a>	COMPLAINT against Defendant PacsGear Inc. Case assigned to Judge Cormac J. Carney for all further proceedings. Discovery referred to Magistrate Judge Suzanne H. Segal.(Filing fee \$ 350 Paid). Jury Demanded. Filed by Plaintiff DatCard Systems Inc.(lwag) (Entered: 08/24/2010)
08/23/2010		21 DAY Summons Issued re Complaint - (Discovery), Complaint - (Discovery) <a href="#"><u>1</u></a> as to Defendant PacsGear Inc. (lwag) (Entered: 08/24/2010)
08/23/2010	<a href="#"><u>2</u></a>	CERTIFICATE of Interested Parties filed by Plaintiff DatCard Systems Inc. (lwag) (Entered: 08/24/2010)
08/23/2010	<a href="#"><u>3</u></a>	REPORT ON THE FILING OF AN ACTION Regarding a Patent or a Trademark (Initial Notification) filed by DatCard Systems Inc. (lwag) (Entered: 08/24/2010)
08/24/2010	<a href="#"><u>4</u></a>	NOTICE of Related Case(s) filed by Plaintiff DatCard Systems Inc. Related Case(s): SACV10-1287 DOC(VBKx) (Stewart, Paul) (Entered: 08/24/2010)
08/24/2010	<a href="#"><u>5</u></a>	REPORT ON THE FILING OF AN ACTION Regarding a Patent or a Trademark (Initial Notification) filed by DatCard Systems Inc. (rla) (Entered: 08/24/2010)
08/24/2010	<a href="#"><u>6</u></a>	FIRST AMENDED COMPLAINT against defendant PacsGear Inc amending Complaint - <a href="#"><u>1</u></a> ,filed by plaintiff DatCard Systems Inc (Attachments: # <a href="#"><u>1</u></a> Part 2)(db) (Additional attachment(s) added on 8/24/2010: # <a href="#"><u>2</u></a> summons issued) (db). (Entered: 08/24/2010)



08/24/2010		21 DAY Summons Issued re Amended Complaint <a href="#">6</a> as to defendant PacsGear Inc. (db) (Entered: 08/24/2010)
08/27/2010	<a href="#">7</a>	ORDER RE TRANSFER PURSUANT TO GENERAL ORDER 08-05 -Related Case- filed. Related Case No: SACV 10-01287 DOC (VBKx). Case transferred from Judge Cormac J. Carney and Magistrate Judge Suzanne H. Segal to Judge David O. Carter and Magistrate Judge Victor B. Kenton for all further proceedings. The case number will now reflect the initials of the transferee Judge SACV 10-01288 DOC (VBKx).Signed by Judge David O. Carter (mca) (Entered: 08/30/2010)
10/07/2010	<a href="#">8</a>	PROOF OF SERVICE Executed by Plaintiff DatCard Systems Inc, upon Defendant PacsGear Inc served on 10/6/2010, answer due 10/27/2010. Service of the Summons and Complaint were executed upon Bill F. Holbrow of Blakely Sokoloff Taylor Zafman, LLP, counsel of record for Defendant PacsGear, Inc. in compliance with Federal Rules of Civil Procedure by substituted service on a domestic corporation, unincorporated association, or public entity and no service by mail was executed. Original Summons NOT returned. ( <i>Re Amended Summons and First Amended Complaint</i> ) (Stewart, Paul) (Entered: 10/07/2010)
10/28/2010	<a href="#">9</a>	FIRST STIPULATION Extending Time to Answer the complaint as to PacsGear Inc answer now due 11/9/2010, filed by Defendant PacsGear Inc.(Holbrow, Willmore) (Entered: 10/28/2010)
11/09/2010	<a href="#">10</a>	ANSWER to Amended Complaint <a href="#">6</a> with JURY DEMAND <i>First Amended Complaint For Patent Infringement</i> filed by Defendant PacsGear Inc.(Holbrow, Willmore) (Entered: 11/09/2010)
11/09/2010	<a href="#">11</a>	<i>Certification</i> of Interested Parties filed by Defendant PacsGear Inc, identifying Datcard Systems, Inc. and Pacsgear, Inc.. (Holbrow, Willmore) (Entered: 11/09/2010)
11/09/2010	<a href="#">12</a>	NOTICE of Related Case(s) filed by Defendant PacsGear Inc. Related Case(s): 8:08-cv-00063-AHS-RNB (Attachments: # <a href="#">1</a> Exhibit A, # <a href="#">2</a> Exhibit B)(Holbrow, Willmore) (Entered: 11/09/2010)
11/12/2010	<a href="#">13</a>	ORDER Setting Scheduling Conference by Judge David O. Carter. Scheduling Conference set for 1/31/2011 at 08:30 AM before Judge David O. Carter. (ade) (Entered: 11/15/2010)
11/17/2010	<a href="#">14</a>	ANSWER to Amended Complaint <a href="#">6</a> , Complaint - (Discovery), Complaint - (Discovery) <a href="#">1</a> <i>Defendant's Amended Answer to Plaintiff's First Amended Complaint</i> filed by Defendant PacsGear Inc.(Holbrow, Willmore) (Entered: 11/17/2010)
11/19/2010	<a href="#">15</a>	REPLY filed by Plaintiff DatCard Systems Inc to Answer to Complaint (Discovery) <a href="#">14</a> <i>Plaintiff DatCard Systems, Inc.'s Reply to Defendant PacsGear, Inc.'s Counterclaim - Demand for Jury Trial</i> (Stewart, Paul) (Entered: 11/19/2010)
11/22/2010	<a href="#">16</a>	NOTICE TO FILER OF DEFICIENCIES in Electronically Filed Documents RE: Amended Answer to Complaint and Counterclaim <a href="#">14</a> . The following error(s) was found: Other error(s) with document(s) are specified below. Other error(s) with document(s): Complaints and other civil case initiating documents shall be filed in the traditional manner rather than electronically pursuant to General Order 10-07.. In response to this notice the court may order (1) an amended or correct document to be filed (2) the document stricken or (3) take other action as the court deems appropriate. You need not take any action in response to this notice unless and until the court directs you to do so. (rla) (Entered: 11/22/2010)



01/14/2011	<a href="#"><u>17</u></a>	JOINT REPORT Rule 26(f) Discovery Plan ; estimated length of trial 4 days, filed by Plaintiff DatCard Systems Inc.. (Stewart, Paul) (Entered: 01/14/2011)
01/31/2011	<a href="#"><u>18</u></a>	MINUTES OF Scheduling Conference held before Judge David O. Carter. The Court sets the following case management dates: Discovery Cut Off - 12-23-2011; Motion Cut Off - 02-13-2012 at 8:30 a.m.; Final Pre Trial Conference - 04-02-2012 at 8:30 a.m.; and Jury Trial - 04-17-2012 at 8:30 a.m. (4 days). Counsel inform the Court that their selection for a settlement procedure pursuant to Local Rule 16-15.4 is private mediation or Retired Judicial Officer. Counsel are directed to file a notice with the Court identifying the mediator selected no later than February 18, 2011; mediation shall be completed by February 13, 2012. Court Reporter: Not Reported. (jba) (Entered: 01/31/2011)
01/31/2011	<a href="#"><u>19</u></a>	SCHEDULING ORDER by Judge David O. Carter. (See Order for details.) (jba) (Entered: 01/31/2011)
02/08/2011	<a href="#"><u>20</u></a>	NOTICE of Lodging [Proposed] Stipulated Protective Order filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#"><u>1</u></a> Proposed Order)(Stewart, Paul) (Entered: 02/08/2011)
02/08/2011	<a href="#"><u>21</u></a>	NOTICE AND REQUEST of Settlement Procedure Selection (Sp3); parties request to appear before a retired judicial officer or other dispute resolution body for mediation type settlement proceedings. Filed by Plaintiff DatCard Systems Inc (Attachments: # <a href="#"><u>1</u></a> Proposed Order)(Stewart, Paul) (Entered: 02/08/2011)
02/09/2011	<a href="#"><u>22</u></a>	NOTICE OF ERRATA filed by Plaintiff DatCard Systems Inc. correcting Notice (Other) <a href="#"><u>20</u></a> (Attachments: # <a href="#"><u>1</u></a> Corrected Notice of Lodging [Proposed] Stipulated Protective Order, # <a href="#"><u>2</u></a> [Proposed] Stipulated Protective Order)(Stewart, Paul) (Entered: 02/09/2011)
02/09/2011	<a href="#"><u>23</u></a>	STIPULATED PROTECTIVE ORDER by Judge David O. Carter: (See document for details.) 19. The parties shall cooperate with one another to minimize the need for filing documents under seal. For example, where the information that renders a document confidential is not germane to the issue to which the filing relates, the parties should agree to redaction of such information from the filed document, (e.g., the substitution of John Doe names in place of real identities). (rla) (Entered: 02/10/2011)
02/10/2011	<a href="#"><u>24</u></a>	ORDER by Judge David O. Carter: Granted the NOTICE AND REQUEST of Settlement Procedure Selection (Sp3) requiring the parties to appear before a retired judicial officer or other private or non-profit dispute resolution body. (rla) (Entered: 02/10/2011)
02/14/2011	<a href="#"><u>25</u></a>	STIPULATION for Leave to to File Second Amended Complaint filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#"><u>1</u></a> Appendix [Proposed] Second Amended Complaint - Demand for Jury Trial, # <a href="#"><u>2</u></a> Exhibit 1, # <a href="#"><u>3</u></a> Exhibit 2, # <a href="#"><u>4</u></a> Exhibit 3, # <a href="#"><u>5</u></a> Exhibit 4, # <a href="#"><u>6</u></a> Exhibit 5)(Stewart, Paul) (Entered: 02/14/2011)
02/14/2011	<a href="#"><u>26</u></a>	NOTICE of Manual Filing filed by Plaintiff DatCard Systems Inc of Second Amended Complaint - Demand for Jury Trial. (Stewart, Paul) (Entered: 02/14/2011)
02/15/2011	<a href="#"><u>28</u></a>	SECOND AMENDED COMPLAINT against defendant PacsGear Inc amending Complaint - (Discovery) <a href="#"><u>1</u></a> ; filed by plaintiff DatCard Systems Inc (Attachments: # <a href="#"><u>1</u></a> PART 2, # <a href="#"><u>2</u></a> PART 3, # <a href="#"><u>3</u></a> PART 4, # <a href="#"><u>4</u></a> PART 5)(rla) (Entered: 02/17/2011)
02/16/2011	<a href="#"><u>27</u></a>	NOTICE TO FILER OF DEFICIENCIES in Electronically Filed Documents RE:



		Stipulation for Leave, <a href="#">25</a> . The following error(s) was found: Proposed Document was not submitted as a separate attachment. In response to this notice the court may order (1) an amended or correct document to be filed (2) the document stricken or (3) take other action as the court deems appropriate. You need not take any action in response to this notice unless and until the court directs you to do so. (db) (Entered: 02/16/2011)
02/18/2011	<a href="#">29</a>	NOTICE of Selection of Mediator filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 02/18/2011)
03/04/2011	<a href="#">30</a>	ANSWER to Amended Complaint <a href="#">28</a> <i>ANSWER TO SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT AND COUNTERCLAIM</i> filed by Defendant PacsGear Inc.(Holbrow, Willmore) (Entered: 03/04/2011)
03/08/2011	<a href="#">31</a>	REPLY filed by Plaintiff DatCard Systems Inc to Answer to Complaint (Discovery) <a href="#">30</a> <i>Plaintiff DatCard Systems, Inc.'s Reply to Defendant Pacsgear, Inc.'s Amended Counterclaim - Demand for Jury Trial</i> (Stewart, Paul) (Entered: 03/08/2011)
11/07/2011	<a href="#">32</a>	NOTICE For Leave to Amend Answer filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 11/07/2011)
11/07/2011	<a href="#">33</a>	NOTICE OF MOTION AND MOTION to Amend <i>Answer and Counterclaim</i> filed by Defendant PacsGear Inc. Motion set for hearing on 12/5/2011 at 08:30 AM before Judge David O. Carter. (Martin, Dennis) (Entered: 11/07/2011)
11/07/2011	<a href="#">34</a>	MEMORANDUM in Support of MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit A)(Martin, Dennis) (Entered: 11/07/2011)
11/07/2011	<a href="#">35</a>	DECLARATION of Willmore F. Holbrow in Support of MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4, # <a href="#">5</a> Exhibit 5, # <a href="#">6</a> Declaration 6) (Martin, Dennis) (Entered: 11/07/2011)
11/08/2011	<a href="#">36</a>	NOTICE OF LODGING filed by <i>Defendant Pacsgear, Inc.</i> re MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> (Attachments: # <a href="#">1</a> Exhibit)(Martin, Dennis) (Entered: 11/08/2011)
11/14/2011	<a href="#">37</a>	OPPOSITION to MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">38</a>	DECLARATION of Paul A. Stewart in Support of DatCard System, Inc.'s Opposition to Defendant's MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">39</a>	NOTICE OF MOTION AND MOTION for Leave to Set Deadline to Serve an Expert Report filed by Plaintiff DatCard Systems Inc. Motion set for hearing on 12/12/2011 at 08:30 AM before Judge David O. Carter. (Attachments: # <a href="#">1</a> Proposed Order Granting DatCard Systems, Inc.'s Motion to Set a Deadline to Serve an Expert Report)(Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">40</a>	MEMORANDUM in Support of MOTION for Leave to Set Deadline to Serve an Expert Report <a href="#">39</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">41</a>	DECLARATION of Paul A. Stewart in Support of DatCard Systems, Inc.'s MOTION for Leave to Set Deadline to Serve an Expert Report <a href="#">39</a> filed by Plaintiff



		DatCard Systems Inc. (Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">42</a>	NOTICE of Manual Filing filed by Plaintiff DatCard Systems Inc of Exhibit 5. (Stewart, Paul) (Entered: 11/14/2011)
11/14/2011	<a href="#">43</a>	APPLICATION to FILE UNDER SEAL EXHIBIT 5 TO THE DECLARATION OF PAUL A. STEWART IN SUPPORT OF DATCARD SYSTEMS, INC.'S MOTION TO SET A DEADLINE TO SERVE AN EXPERT REPORT; filed by plaintiff DatCard Systems Inc. (rla) (Entered: 11/17/2011)
11/15/2011	<a href="#">44</a>	ORDER by Judge David O. Carter: GRANTING APPLICATION TO FILE UNDER SEAL Exhibit 5 to the Declaration of Paul A. Stewart In Support of Datcard Systems, Inc.'s Motion to Set A Deadline to Serve an Expert Report <a href="#">43</a> ; (rla) (Entered: 11/17/2011)
11/15/2011	<a href="#">50</a>	SEALED DOCUMENT RE: CONFIDENTIAL EXHIBIT 5 to Declaration of Paul in Support of Motion to Set a Deadline to Serve an Expert Report. (Attachments: # <a href="#">1</a> Part 2, # <a href="#">2</a> Part 3)(lwag) (Entered: 11/29/2011)
11/21/2011	<a href="#">45</a>	MEMORANDUM in Opposition to MOTION for Leave to Set Deadline to Serve an Expert Report <a href="#">39</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 11/21/2011)
11/21/2011	<a href="#">46</a>	DECLARATION of Dennis G. Martin in Opposition to MOTION for Leave to Set Deadline to Serve an Expert Report <a href="#">39</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 1)(Martin, Dennis) (Entered: 11/21/2011)
11/21/2011	<a href="#">47</a>	REPLY in Support of MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B)(Martin, Dennis) (Entered: 11/21/2011)
11/21/2011	<a href="#">48</a>	DECLARATION of Willmore F. Holbrow in Support of MOTION to Amend <i>Answer and Counterclaim</i> <a href="#">33</a> <i>Supplemental Declaration</i> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 1)(Martin, Dennis) (Entered: 11/21/2011)
11/28/2011	<a href="#">49</a>	REPLY in support of MOTION for Leave to Set Deadline to Serve an Expert Report <a href="#">39</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 11/28/2011)
11/29/2011	<a href="#">51</a>	MINUTES (IN CHAMBERS): ORDER by Judge David O. Carter: GRANTING LEAVE TO FILE FIRST AMENDED ANSWER AND COUNTERCLAIM <a href="#">33</a> AND GRANTING, IN PART, MOTION FOR LEAVE TO SET DEADLINE <a href="#">39</a> . Plaintiff's Motion to Set a Deadline is granted to the extent that Plaintiff may serve an expert report in rebuttal to the November 1, 2011 Expert Report of Robert Green no later than December 16, 2011. (rla) (Entered: 11/30/2011)
12/13/2011	<a href="#">52</a>	REPLY filed by Plaintiff DatCard Systems Inc to <i>Pacsgear's Second Amended Counterclaim</i> (Stewart, Paul) (Entered: 12/13/2011)
01/13/2012	<a href="#">53</a>	NOTICE of Manual Filing filed by Plaintiff DatCard Systems Inc of Application and Proposed Order to File Under Seal; Confidential Exhibits to Declaration of Paul A. Stewart in Support of DatCard's Motion for Summary Judgment of Infringement of U.S. Patents 7,783,174 and 7,734,157; Confidential Declaration of Jack Goldberg in Support of DatCard's Motion for Summary Judgment of Infringement of U.S. Patents 7,783,174 and 7,734,157; and Confidential Declaration of Dr. Alan Rowberg, M.D. in Support of DatCard's Motion for Summary Judgment of Infringement of U.S. Patents 7,783,174 and 7,734,157. (Stewart, Paul) (Entered: 01/13/2012)



01/13/2012		Notice of Electronic Filing re Notice of Manual Filing (G-92) <a href="#">53</a> e-mailed to David H. Chan bounced due to invalid e-mail address. The primary e-mail address associated with the attorney record has been deleted. Pursuant to the General Order and Local Rules it is the attorneys obligation to maintain all personal contact information including e-mail address in the CM/ECF system. THERE IS NO PDF DOCUMENT ASSOCIATED WITH THIS ENTRY.(jj) TEXT ONLY ENTRY (Entered: 01/13/2012)
01/13/2012	<a href="#">81</a>	APPLICATION to FILE UNDER SEAL Exhibits 2, 6-8, 13, 15, 17, and 19 to the Declaration of Paul A Stewart; the Declaration of Jack Goldberg with Exhibit 22; and the Declaration of Dr. Alan Rowberg, M.D. with Exhibit 23 in Support of Datcard Systems, Inc.'s Motion for Summary Judgment of Infringement of U.S. Patents 7,783,174 and 7,734, 157; filed by plaintiff/counterdefendant DatCard Systems Inc. (rla) (Entered: 01/19/2012)
01/13/2012	<a href="#">82</a>	ORDER by Judge David O. Carter: GRANTING APPLICATION to File Under Seal <a href="#">81</a> . (See document for details.) IT IS SO ORDERED.(rla) (Entered: 01/19/2012)
01/13/2012	<a href="#">83</a>	SEALED DOCUMENT CONFIDENTIAL EXHIBITS 2,6,7,8,13,15,17 and 19 to the Declaration of Paul A. Stewart in support of Datcard Systems, Inc.'s MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> (Attachments: # <a href="#">1</a> part 2, # <a href="#">2</a> part 3, # <a href="#">3</a> part 4, # <a href="#">4</a> part 5, # <a href="#">5</a> part 6, # <a href="#">6</a> part 7, # <a href="#">7</a> part 8)(twdb) (Entered: 01/20/2012)
01/13/2012	<a href="#">84</a>	SEALED DOCUMENT RE: DECLARATION of Jack Goldberg in Support of Motion for Summary Judgment for Infringement of US Patents 7,783,174 and 7,734,157. (Attachments: # <a href="#">1</a> 1, # <a href="#">2</a> 2, # <a href="#">3</a> 3)(ade) (Entered: 01/23/2012)
01/13/2012	<a href="#">85</a>	SEALED DOCUMENT RE: DECLARATION of Dr. Alan Rowberg, MD In Support of Motion for Summary Judgment of Infringement of US Patents 7,783,174 and 7,734,157. (Attachments: # <a href="#">1</a> 1, # <a href="#">2</a> 2, # <a href="#">3</a> 3, # <a href="#">4</a> 4, # <a href="#">5</a> 5)(ade) (Entered: 01/23/2012)
01/16/2012	<a href="#">54</a>	NOTICE OF MOTION AND MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial filed by Plaintiff DatCard Systems Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Attachments: # <a href="#">1</a> Proposed Order)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">55</a>	MEMORANDUM in Support of MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">56</a>	DECLARATION of Paul A. Stewart in Support of MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> and Exhibit 1 filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">57</a>	NOTICE OF MOTION AND MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents filed by Plaintiff DatCard Systems Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Attachments: # <a href="#">1</a> Proposed Order) (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">58</a>	MEMORANDUM in Support of MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)



01/16/2012	<a href="#">59</a>	DECLARATION of Paul A. Stewart in Support of MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4, # <a href="#">5</a> Exhibit 5, # <a href="#">6</a> Exhibit 6, # <a href="#">7</a> Exhibit 7, # <a href="#">8</a> Exhibit 8, # <a href="#">9</a> Exhibit 9, # <a href="#">10</a> Exhibit 10, # <a href="#">11</a> Exhibit 11)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">60</a>	NOTICE OF MOTION AND MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 filed by Plaintiff DatCard Systems Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Attachments: # <a href="#">1</a> Proposed Order, # <a href="#">2</a> DatCard Systems, Inc.'s Statement of Uncontroverted Facts and Conclusions of Law)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">61</a>	MEMORANDUM in Support of MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">62</a>	DECLARATION of Paul A. Stewart in Support of MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4, # <a href="#">5</a> Exhibit 5, # <a href="#">6</a> Exhibit 6, # <a href="#">7</a> Exhibit 7, # <a href="#">8</a> Exhibit 8, # <a href="#">9</a> Exhibit 9, # <a href="#">10</a> Exhibit 10)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">63</a>	DECLARATION of Dr. Alan Rowberg, M.D. in Support of MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> and Exhibit 11 filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">64</a>	NOTICE OF MOTION AND MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 filed by Plaintiff DatCard Systems Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Attachments: # <a href="#">1</a> Proposed Order, # <a href="#">2</a> DatCard Systems, Inc.'s Statement of Uncontroverted Facts and Conclusions of Law)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">65</a>	MEMORANDUM in Support of MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">66</a>	DECLARATION of Paul A. Stewart in Support of MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4, # <a href="#">5</a> Exhibit 5, # <a href="#">6</a> Exhibit 6, # <a href="#">7</a> Exhibit 7, # <a href="#">8</a> Exhibit 8, # <a href="#">9</a> Exhibit 9, # <a href="#">10</a> Exhibit 10, # <a href="#">11</a> Exhibit 11, # <a href="#">12</a> Exhibit 12, # <a href="#">13</a> Exhibit 13, # <a href="#">14</a> Exhibit 14, # <a href="#">15</a> Exhibit 15, # <a href="#">16</a> Exhibit 16, # <a href="#">17</a> Exhibit 17, # <a href="#">18</a> Exhibit 18, # <a href="#">19</a> Exhibit 19, # <a href="#">20</a> Exhibit 20, # <a href="#">21</a> Exhibit 21)(Stewart, Paul) (Entered: 01/16/2012)
01/16/2012	<a href="#">67</a>	MEMORANDUM in Support of <i>Non-Infringement of the "Search/Burn" Patents</i> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B, # <a href="#">3</a> Appendix C, # <a href="#">4</a> Appendix D)(Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">68</a>	NOTICE OF MOTION AND MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents filed by defendant PacsGear Inc. Motion



		set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">69</a>	MEMORANDUM in Support of MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#">68</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B, # <a href="#">3</a> Appendix C, # <a href="#">4</a> Appendix D) (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">70</a>	STATEMENT of Uncontroverted Issues of Fact and Conclusions of Law MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#">68</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">71</a>	NOTICE OF MOTION AND MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent filed by defendant PacsGear Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">72</a>	MEMORANDUM in Support of MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B)(Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">73</a>	STATEMENT of Uncontroverted Issues of Fact and Conclusions of Law MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">74</a>	NOTICE OF MOTION AND MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents filed by defendant PacsGear Inc. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">75</a>	MEMORANDUM in Support of MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#">74</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B, # <a href="#">3</a> Appendix C)(Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">76</a>	STATEMENT of Uncontroverted Issues of Fact and Conclusions of Law MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#">74</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#">77</a>	EXHIBIT Combined Exhibits to MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#">74</a> , MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> , MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#">68</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 5, # <a href="#">2</a> Exhibit 55, # <a href="#">3</a> Exhibit 56, # <a href="#">4</a> Exhibit 57, # <a href="#">5</a> Exhibit 58, # <a href="#">6</a> Exhibit 76, # <a href="#">7</a> Exhibit 77, # <a href="#">8</a> Exhibit 78, # <a href="#">9</a> Exhibit 148, # <a href="#">10</a> Exhibit 158, # <a href="#">11</a> Exhibit 202, # <a href="#">12</a> Exhibit 203, # <a href="#">13</a> Exhibit 205, # <a href="#">14</a> Exhibit 206, # <a href="#">15</a> Exhibit 210, # <a href="#">16</a> Exhibit 211, # <a href="#">17</a> Exhibit 217, # <a href="#">18</a> Exhibit 221, # <a href="#">19</a> Exhibit 222, # <a href="#">20</a> Exhibit 223, # <a href="#">21</a> Exhibit 224, # <a href="#">22</a> Exhibit 227, # <a href="#">23</a> Exhibit 229, # <a href="#">24</a> Exhibit 230, # <a href="#">25</a> Exhibit 231, # <a href="#">26</a> Exhibit 233, # <a href="#">27</a> Exhibit 240, # <a href="#">28</a> Exhibit 241, # <a href="#">29</a> Exhibit 242, # <a href="#">30</a> Exhibit 243, # <a href="#">31</a> Exhibit 244, # <a href="#">32</a> Exhibit 245, # <a href="#">33</a> Exhibit 246, # <a href="#">34</a> Exhibit 247, # <a href="#">35</a> Exhibit 248, # <a href="#">36</a> Exhibit 249, # <a href="#">37</a> Exhibit 250, # <a href="#">38</a> Exhibit 251, # <a href="#">39</a> Exhibit 252, # <a href="#">40</a> Exhibit 253, # <a href="#">41</a> Exhibit 254, # <a href="#">42</a> Exhibit 255, # <a href="#">43</a> Exhibit 256, # <a href="#">44</a> Exhibit 257, # <a href="#">45</a> Exhibit 258, # <a href="#">46</a> Exhibit 259, # <a href="#">47</a> Exhibit 260, # <a href="#">48</a> Exhibit 261, # <a href="#">49</a> Exhibit 262, # <a href="#">50</a> Exhibit 263, # <a href="#">51</a> Exhibit 264, # <a href="#">52</a> Exhibit 265, # <a href="#">53</a> Exhibit 266, # <a href="#">54</a> Exhibit 267)(Martin, Dennis)



		(Entered: 01/16/2012)
01/16/2012	<a href="#"><u>78</u></a>	EXHIBIT Combined Expert Reports and Deposition Excerpts to MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#"><u>68</u></a> , MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> , MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#"><u>71</u></a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#"><u>1</u></a> Exhibit A, # <a href="#"><u>2</u></a> Exhibit B, # <a href="#"><u>3</u></a> Exhibit C, # <a href="#"><u>4</u></a> Exhibit D, # <a href="#"><u>5</u></a> Exhibit E, # <a href="#"><u>6</u></a> Exhibit F, # <a href="#"><u>7</u></a> Exhibit G, # <a href="#"><u>8</u></a> Exhibit H, # <a href="#"><u>9</u></a> Exhibit I, # <a href="#"><u>10</u></a> Exhibit J, # <a href="#"><u>11</u></a> Exhibit K, # <a href="#"><u>12</u></a> Exhibit L, # <a href="#"><u>13</u></a> Exhibit M, # <a href="#"><u>14</u></a> Exhibit N, # <a href="#"><u>15</u></a> Exhibit O)(Martin, Dennis) (Entered: 01/16/2012)
01/16/2012	<a href="#"><u>79</u></a>	DECLARATION of Osman Ratib MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/16/2012)
01/17/2012	<a href="#"><u>80</u></a>	DECLARATION of Osman Ratib MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/17/2012)
01/23/2012	<a href="#"><u>86</u></a>	NOTICE of Manual Filing filed by Plaintiff DatCard Systems Inc of Application and [Proposed] Order to File Under Seal; Confidential Exhibits 2, 3, 4, and 5 to the Declaration of Paul A. Stewart in Support of DatCard's Opposition to Pacsgear's Motion for Summary Judgment of Non-Infringement of the "Search/Burn" Patents; Confidential Exhibit 2 to the Declaration of Jack Goldberg in Support of DatCard's Opposition to Pacsgear's Motion for Summary Judgment of Non-Infringement and Invalidity of the "Timeout" Patent; Confidential Exhibits 1 and 3 to the Declaration of Paul A. Stewart in Support of DatCard's Opposition to Pacsgear's Motion for Summary Judgment of Non-Infringement and Invalidity of the "Timeout" Patent. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>87</u></a>	MEMORANDUM in Opposition to MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#"><u>68</u></a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>88</u></a>	STATEMENT of Genuine Issues of Fact in Opposition to Pacsgear's MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#"><u>68</u></a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>89</u></a>	DECLARATION of Paul A. Stewart in Opposition to MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#"><u>68</u></a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#"><u>1</u></a> Exhibit 1, # <a href="#"><u>2</u></a> Exhibit 2, # <a href="#"><u>3</u></a> Exhibit 3, # <a href="#"><u>4</u></a> Exhibit 4, # <a href="#"><u>5</u></a> Exhibit 5)(Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>90</u></a>	MEMORANDUM in Opposition to MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>91</u></a>	STATEMENT of Genuine Issues of Fact in Opposition to Pacsgear's MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#"><u>92</u></a>	DECLARATION of Paul A. Stewart in Opposition to MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#"><u>74</u></a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#"><u>1</u></a> Exhibit 1, # <a href="#"><u>2</u></a> Exhibit 2, # <a href="#"><u>3</u></a> Exhibit 3)(Stewart, Paul) (Entered: 01/23/2012)



01/23/2012	<a href="#">93</a>	MEMORANDUM in Opposition to MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#">94</a>	STATEMENT of Genuine Issues of Fact in Opposition to Pacsgear's MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#">95</a>	DECLARATION of Paul A. Stewart in Opposition to MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3)(Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#">96</a>	DECLARATION of Jack Goldberg in Opposition to MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2)(Stewart, Paul) (Entered: 01/23/2012)
01/23/2012	<a href="#">97</a>	Opposition opposition re: MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">98</a>	DECLARATION of Dennis G. Martin in opposition to MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">99</a>	MEMORANDUM in Opposition to MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">100</a>	DECLARATION of Dennis G. Martin in opposition to MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">101</a>	MEMORANDUM in Opposition to MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B, # <a href="#">3</a> Appendix C)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">102</a>	STATEMENT of Genuine Issued of Fact in Opposition to MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">103</a>	MEMORANDUM in Opposition to MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">104</a>	STATEMENT of Genuine Issues of Fact in Opposition to MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> filed by Defendant PacsGear Inc. (Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">105</a>	EXHIBIT Combined Expert Reports and Deposition Excerpts in Opposition to to



		MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> , MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit A, # <a href="#">2</a> Exhibit B, # <a href="#">3</a> Exhibit H, # <a href="#">4</a> Exhibit I - Opp., # <a href="#">5</a> Exhibit J - Opp., # <a href="#">6</a> Exhibit M - Opp.)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">106</a>	EXHIBIT Combined Exhibits in Opposition to to MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> , MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 5, # <a href="#">2</a> Exhibit 202, # <a href="#">3</a> Exhibit 217, # <a href="#">4</a> Exhibit 221, # <a href="#">5</a> Exhibit 224, # <a href="#">6</a> Exhibit 229, # <a href="#">7</a> Exhibit 241, # <a href="#">8</a> Exhibit 249, # <a href="#">9</a> Exhibit 256, # <a href="#">10</a> Exhibit 258, # <a href="#">11</a> Exhibit 259, # <a href="#">12</a> Exhibit 260, # <a href="#">13</a> Exhibit 261, # <a href="#">14</a> Exhibit 262, # <a href="#">15</a> Exhibit 264, # <a href="#">16</a> Exhibit 265, # <a href="#">17</a> Exhibit 268, # <a href="#">18</a> Exhibit 269, # <a href="#">19</a> Exhibit 270, # <a href="#">20</a> Exhibit 271, # <a href="#">21</a> Exhibit 272, # <a href="#">22</a> Exhibit 273, # <a href="#">23</a> Exhibit 274, # <a href="#">24</a> Exhibit 275, # <a href="#">25</a> Exhibit 276, # <a href="#">26</a> Exhibit 277, # <a href="#">27</a> Exhibit 278, # <a href="#">28</a> Exhibit 279)(Martin, Dennis) (Entered: 01/23/2012)
01/23/2012	<a href="#">119</a>	APPLICATION to file under Seal confidential exhibits to the declarations of Paul A. Stewart and declaration of Jack Goldberg in support of Datcard's oppositions to Pacsgear's motions for summary judgment filed by plaintiff DatCard Systems Inc. (twdb) (Entered: 01/31/2012)
01/24/2012	<a href="#">120</a>	ORDER by Judge David O. Carter: granting <a href="#">119</a> Application to file under Seal confidential exhibits to the declarations of Paul A. Stewart and Goldberg in support of Datcard's oppositions to Pacsgear's motions for summary judgment <a href="#">119</a> . (twdb) (Entered: 01/31/2012)
01/24/2012	<a href="#">121</a>	**SEALED DOCUMENT ** EXHIBITS 1 AND 3 TO THE DECLARATION OF PAULA STEWART IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT AND INVALIDITY OF THE TIMEOUT PATENT. (ade) (Entered: 01/31/2012)
01/24/2012	<a href="#">122</a>	**SEALED DOCUMENT ** EXHIBIT 2 TO THE DECLARATION OF JACK GOLDBERG IN SUPPORT OF OPPOSITION TO MOTION FOR SUMMARY JUDGMENT (ade) (Additional attachment(s) added on 1/31/2012: # <a href="#">1</a> 2, # <a href="#">2</a> 3, # <a href="#">3</a> 4) (ade). (Entered: 01/31/2012)
01/24/2012	<a href="#">123</a>	**SEALED DOCUMENT ** EXHIBITS 2, 3, 4, AND 5 to the Declaration of Paul A. Stewart in Support of Opposition to Motion for Summary Judgment. (Attachments: # <a href="#">1</a> 2, # <a href="#">2</a> 3, # <a href="#">3</a> 4, # <a href="#">4</a> 5, # <a href="#">5</a> 6, # <a href="#">6</a> 7, # <a href="#">7</a> 8)(ade) (Entered: 01/31/2012)
01/26/2012	<a href="#">107</a>	NOTICE of Change of Mediator filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/26/2012)
01/30/2012	<a href="#">108</a>	REPLY in Support of MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/30/2012)
01/30/2012	<a href="#">109</a>	REPLY in Support of MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/30/2012)



01/30/2012	<a href="#">110</a>	REPLY in Support of MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/30/2012)
01/30/2012	<a href="#">111</a>	REPLY in Support of MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/30/2012)
01/30/2012	<a href="#">112</a>	NOTICE of Manual Filing filed by Defendant PacsGear Inc of Application to File Under Seal; Proposed Order to File Under Seal; Confidential Reply Brief in Support of Pagsgear's MSJ of Invalidity of "Search/Burn" and "HIPAA" Patents; Confidential Exhibits to the Reply Declaration of Dennis G. Martin in Support thereof. (Martin, Dennis) (Entered: 01/30/2012)
01/30/2012	<a href="#">113</a>	DECLARATION of Paul A. Stewart (Supplemental) in Support of MOTION for Order for Precluding the Expert Opinion Testimony of Steven Horii and Ian Jestice Regarding Obviousness of the Asserted Patents <a href="#">57</a> , MOTION to Bifurcate the Issue of Inequitable Conduct for a Separate Bench Trial <a href="#">54</a> , MOTION for Partial Summary Judgment as to Infringement of U.S. Patents 7,783,174 and 7,734,157 <a href="#">64</a> , MOTION for Partial Summary Judgment as to That U.S. Patent Nos. 7,302,164, 7,783,174, 7,729,597 and 7,734,157 are not Invalid Under 35 USC 102 <a href="#">60</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 22, # <a href="#">2</a> Exhibit 23, # <a href="#">3</a> Exhibit 24, # <a href="#">4</a> Exhibit 25, # <a href="#">5</a> Exhibit 26, # <a href="#">6</a> Exhibit 27, # <a href="#">7</a> Exhibit 28, # <a href="#">8</a> Exhibit 29, # <a href="#">9</a> Exhibit 30)(Stewart, Paul) (Entered: 01/30/2012)
01/30/2012	<a href="#">114</a>	REPLY In Support MOTION for Summary Judgment as to Non-Infringement of the "Search/Burn" Patents <a href="#">68</a> filed by Defendant PacsGear Inc. (Holbrow, Willmore) (Entered: 01/30/2012)
01/30/2012	<a href="#">115</a>	REPLY In Support MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Appendix A, # <a href="#">2</a> Appendix B)(Holbrow, Willmore) (Entered: 01/30/2012)
01/30/2012	<a href="#">116</a>	DECLARATION of Willmore F. Holbrow, III Re: Reply in Support of MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 285, # <a href="#">2</a> Exhibit 286) (Holbrow, Willmore) (Entered: 01/30/2012)
01/30/2012	<a href="#">117</a>	REPLY In Support of MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#">74</a> [Public Version] filed by Defendant PacsGear Inc. (Holbrow, Willmore) (Entered: 01/30/2012)
01/30/2012	<a href="#">118</a>	DECLARATION of Dennis G. Martin Re: Reply in Support of MOTION for Summary Judgment as to Invalidity of the "Search/Burn" and "HIPAA" Patents <a href="#">74</a> [PUBLIC] filed by Defendant PacsGear Inc. (Attachments: # <a href="#">1</a> Exhibit 8, # <a href="#">2</a> Exhibit 19, # <a href="#">3</a> Exhibit 280, # <a href="#">4</a> Exhibit 281, # <a href="#">5</a> Exhibit 282, # <a href="#">6</a> Exhibit 283, # <a href="#">7</a> Exhibit 284)(Holbrow, Willmore) (Entered: 01/30/2012)
01/31/2012	<a href="#">124</a>	SUPPLEMENT to MOTION for Summary Judgment as to Non-Infringement and Invalidity of the "Timeout" Patent <a href="#">71</a> <i>DatCard's Notice of Supplemental Authority Regarding Pending Motion for Summary Judgment of Non-Infringement and Invalidity of the "Timeout" Patent</i> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 01/31/2012)



01/31/2012	<a href="#">126</a>	SEALED DOCUMENT APPLICATION for order to Seal Confidential reply memorandum in support of motion for summary judgment of invalidity of the Search/Burn and Hipaa Patents and Exhibits 8,19 and 280 to the reply declaration of Dennis G. Martin in support thereof. Motion set for hearing on 2/13/2012 at 08:30 AM before Judge David O. Carter. (twdb) (Entered: 02/13/2012)
02/03/2012	<a href="#">125</a>	MINUTE ORDER IN CHAMBERS by Judge David O. Carter re: SETTING STATUS CONFERENCE TO APPOINT RULE 706 EXPERT. Given the technical complexity of the patents at issue in the pending summary judgment motions, the Court will be appointing an expert witness, pursuant to Federal Rule of Civil Procedure 706. Lead counsel for both parties are ordered to appear before the Court on February 9, 2012 at 1:30 p.m. to discuss this matter. The parties are not required to submit anything to the Court prior to this conference but should come prepared with suggestions of potential experts who are located in the Southern California area. The Court will also be setting a new date for the hearing on the summary judgment motions at the February 9, 2012 conference; they will not be heard on February 13, 2012. (jba) (Entered: 02/03/2012)
02/03/2012	<a href="#">127</a>	SEALED ORDER by Judge David O. Carter: granting <a href="#">126</a> Application to Seal CONFIDENTIAL REPLY MEMORANDUM in support of motion for summary judgment of invalidity of the search/burn and hipaa patents and exhibits 8, 19 and 280 to the reply declaration of Dennis G. Martin in support thereof (twdb) (Entered: 02/13/2012)
02/03/2012	<a href="#">128</a>	SEALED DOCUMENT CONFIDENTIAL EXHIBITS 8,19 and 280 to the reply declaration of Dennis G. Martin in support of Pacsgear's motion for summary judgment of invalidity of search/burn and hipaa patents re APPLICATION to Seal <a href="#">126</a> (twdb) (Entered: 02/13/2012)
02/03/2012	<a href="#">129</a>	SEALED DOCUMENT CONFIDENTIAL REPLY MEMORANDUM in support of motion for summary judgment of invalidity of the search/burn and hipaa patents re APPLICATION to Seal <a href="#">126</a> (twdb) (Entered: 02/13/2012)
02/09/2012	<a href="#">137</a>	MINUTES OF Status Conference held before Judge David O. Carter, RE: APPOINT RULE 706 EXPERT: The Court continues the Status Conference re: Appoint Rule 706 Expert to March 6, 2012 at 7:30 a.m. Parties to have name of expert by March 6, 2012. The Jury Trial set on April 17, 2012 and Final Pretrial Conference set on April 2, 2012 are to remain. Court Reporter: Deborah Parker (Partially). (rla) (Entered: 02/21/2012)
02/13/2012	<a href="#">130</a>	NOTICE OF MOTION AND MOTION to Continue Pretrial Conference Date and Trial Date from April 2 and 17, 2012 to TBD filed by Defendant PacsGear Inc. Motion set for hearing on 3/12/2012 at 08:30 AM before Judge David O. Carter. (Holbrow, Willmore) (Entered: 02/13/2012)
02/13/2012	<a href="#">131</a>	MEMORANDUM IN SUPPORT OF MOTION TO CONTINUE THE PTC AND TRIAL DATES FOR A REASONABLE PERIOD OF TIME AFTER SUMMARY JUDGMENT MOTIONS ARE DECIDED re MOTION to Continue Pretrial Conference Date and Trial Date from April 2 and 17, 2012 to TBD <a href="#">130</a> filed by Defendant PacsGear Inc. (Holbrow, Willmore) (Entered: 02/13/2012)
02/16/2012	<a href="#">132</a>	NOTICE of Change of Attorney Information for attorney Bridget Anne Smith counsel for Plaintiff DatCard Systems Inc. Adding Bridget A. Smith as attorney as counsel of record for DatCard Systems, Inc. for the reason indicated in the G-06 Notice. Filed by Plaintiff DatCard Systems, Inc. (Smith, Bridget) (Entered: 02/16/2012)



		02/16/2012)
02/16/2012	<a href="#"><u>133</u></a>	NOTICE of Change of Attorney Information for attorney Brian Christopher Claassen counsel for Plaintiff DatCard Systems Inc. Adding Brian C. Claassen as attorney as counsel of record for DatCard Systems, Inc. for the reason indicated in the G-06 Notice. Filed by Plaintiff DatCard Systems, Inc. (Claassen, Brian) (Entered: 02/16/2012)
02/16/2012	<a href="#"><u>134</u></a>	NOTICE filed by Plaintiff DatCard Systems Inc. <i>Notice of Attorney Withdrawal</i> (Stewart, Paul) (Entered: 02/16/2012)
02/16/2012	<a href="#"><u>136</u></a>	ORDER by Judge David O. Carter: Granting Pacsgear's Motion to Continue the PTC and Trial dates for a reasonable period of time after Summary Judgment Motions are decided <a href="#"><u>130</u></a> . IT IS ORDERED, The pretrial conference date of April 2, 2012 and the trial date of April 17, 2012 are hereby continued and will be rescheduled on mutually agreeable dates no earlier than 49 days following the date the Court rules on the five pending motions for summary judgment. The trial date will be set on the day the summary judgment motions are heard. The parties are hereby ORDERED to appear for a status conference regarding the appointment of a Rule 706 expert on March 5, 2012 at 8:30 a.m. This hearing will be vacated if the parties stipulate to a rule 706 expert by March 1, 2012 at 5:00 p.m. (mt) (Entered: 02/17/2012)
02/17/2012	<a href="#"><u>135</u></a>	MEMORANDUM in Opposition to MOTION to Continue Pretrial Conference Date and Trial Date from April 2 and 17, 2012 to TBD <a href="#"><u>130</u></a> filed by Plaintiff DatCard Systems Inc. (Stewart, Paul) (Entered: 02/17/2012)
03/01/2012	<a href="#"><u>138</u></a>	NOTICE Joint Notice Re: Court Appointed Expert (FRE 706) filed by Defendant PacsGear Inc. (Attachments: # <a href="#"><u>1</u></a> Appendix A)(Holbrow, Willmore) (Entered: 03/01/2012)
03/07/2012	<a href="#"><u>139</u></a>	MINUTES OF Status Conference/Scheduling Conference held before Judge David O. Carter: Court and counsel discuss this case informally and without the presence of the Court Reporter. Parties submit on agreed schedule. Court to issue a minute order with scheduling dates.Court Reporter: Not Reported. (twdb) (Entered: 03/09/2012)
03/07/2012	<a href="#"><u>140</u></a>	MINUTE ORDER IN CHAMBERS by Judge David O. Carter, SCHEDULING REPORT: Case management dates shall be as follows, although only the October, November, and December dates apply to Pacsgear, Inc.: 4/30/12: Document production by Data Distributing on Accused Products; 5/31/12: Deposition of Data Distributing on Accused Products; (See document for further details.) 8/10/12: Discovery cut-off (fact and expert). (rla) (Main Document 140 replaced on 3/12/2012) (rla). (Entered: 03/12/2012)
08/17/2012	<a href="#"><u>141</u></a>	ORDER TRANSFERRING CIVIL ACTION pursuant to Section 3.1 of General Order 08-05. ORDER case transferred from Judge David O. Carter to the calendar of Judge Mariana R. Pfaelzer for all further proceedings. The case number will now reflect the initials of the transferee Judge SACV 10-01288 MRP(VBKx). Signed by Judge David O. Carter and Judge Mariana R. Pfaelzer. (rn) (Entered: 08/17/2012)
08/24/2012	<a href="#"><u>142</u></a>	MINUTES: ORDER SETTING STATUS CONFERENCE: The Court on its own motion schedules Status Conference in the above cases for Thursday, September 6, 2012, at 11:00 a.m. The hearing is set before the Honorable Mariana R. Pfaelzer, located atthe United States District Court, 312 N. Spring Street, Los Angeles, CA 90012, Courtroom 12 is on the Spring Street level by Judge Mariana R. Pfaelzer. (ir) (Entered: 08/24/2012)



09/06/2012	<a href="#">143</a>	MINUTES OF ORDER SETTING STATUS CONFERENCE held before Judge Mariana R. Pfaelzer: Court and counsel discuss the status of the case, the five pending motions for summary judgment. The Court set a hearing on the motions for summary judgment for Thursday, September 20, 2012 at 1:00 p.m. before Judge Mariana R. Pfaelzer.Court Reporter: Mirial Baird. (bp) (Entered: 09/20/2012)
09/20/2012	<a href="#">144</a>	MINUTES OF HEARING ON MOTIONS FOR SUMMARY JUDGMENT held before Judge Mariana R. Pfaelzer. The case is called and appearances are made. Counsel argues the five motions for summary judgment. The Court takes the motions under submission and its order will follow. Court Reporter: Victoria Valine. (cs) (Entered: 10/16/2012)
10/26/2012	<a href="#">145</a>	CLAIM CONSTRUCTION ORDER by Judge Mariana R. Pfaelzer that the Court adopts the constructions set forth in this opinion for the disputed claim terms in this suit. The constructions shall govern all proceedings in this case. (See attached Order for further details). (jp) (Entered: 10/29/2012)
10/26/2012	<a href="#">146</a>	MINUTE IN CHAMBERS Order Scheduling Hearing by Judge Mariana R. Pfaelzer: On 9/20/2012, the Court held a Markman hearing in this case. On 10/26/2012, the Court issued a Markman order construing several claim terms in dispute. The Court hereby schedules a hearing for 11/5/2012 at 11:00 AM. The Court will hearoral argument regarding the five pending summary judgment motions (ECF Nos. 60, 64, 68, 71, and 74) in light of the Courts Markman order. The parties are instructed not to submit supplemental briefs in light of the Markman order. The infringement and validity issues have been adequately briefed. (jp) (Entered: 10/29/2012)
10/26/2012	<a href="#">147</a>	MINUTE ORDER IN CHAMBERS re Order Scheduling Hearing by Judge Mariana R. Pfaelzer. The Court has issued a Markman order in this case <a href="#">145</a> . The Court hereby schedules a hearing for Monday, November 5, 2012, at 11:00 a.m. The agenda for this hearing is oral argument regarding the five pending summary judgment motions <a href="#">60</a> , <a href="#">64</a> , <a href="#">68</a> , <a href="#">71</a> , <a href="#">74</a> in light of the Court's Markman order. The parties are instructed not to submit supplemental briefs in light of the Court's Markman order. The issues pertaining to these pending motions have already been adequately briefed. (lom) (Entered: 10/30/2012)
11/02/2012	<a href="#">148</a>	TRANSCRIPT for proceedings held on 09/20/2012 @ 1pm. Court Reporter: Victoria L. Valine, CSR, RMR, CRR,www.victoriavalinecsr.com. Transcript may be viewed at the court public terminal or purchased through the Court Reporter before the deadline for Release of Transcript Restriction. After that date it may be obtained through www.victoriavalinecsr.com or PACER. Notice of Intent to Redact due within 7 days of this date. Redaction Request due 11/23/2012. Redacted Transcript Deadline set for 12/3/2012. Release of Transcript Restriction set for 1/31/2013. (Valine, Victoria) (Entered: 11/02/2012)
11/02/2012	149	NOTICE OF FILING TRANSCRIPT filed for proceedings 9/20/2012 @ 1pm re Transcript <a href="#">148</a> THERE IS NO PDF DOCUMENT ASSOCIATED WITH THIS ENTRY.(Valine, Victoria) TEXT ONLY ENTRY (Entered: 11/02/2012)
11/02/2012	<a href="#">150</a>	EX PARTE APPLICATION for Order for Allowing the Submission of Additional Evidence on the Pending Motions for Summary Judgment; Memorandum of Points and Authorities in Support Thereof filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Proposed Order)(Smith, Bridget) (Entered: 11/02/2012)
11/02/2012	<a href="#">151</a>	DECLARATION of Bridget A. Smith in Support of EX PARTE APPLICATION for Order for Allowing the Submission of Additional Evidence on the Pending Motions



		for Summary Judgment; Memorandum of Points and Authorities in Support Thereof <a href="#">150</a> filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Exhibit 1, # <a href="#">2</a> Exhibit 2, # <a href="#">3</a> Exhibit 3, # <a href="#">4</a> Exhibit 4)(Smith, Bridget) (Entered: 11/02/2012)
11/04/2012	<a href="#">152</a>	MEMORANDUM of Points and Authorities in Opposition Re: EX PARTE APPLICATION for Order for Allowing the Submission of Additional Evidence on the Pending Motions for Summary Judgment; Memorandum of Points and Authorities in Support Thereof <a href="#">150</a> (Attachments: # <a href="#">1</a> Appendix A)(Martin, Dennis) (Entered: 11/04/2012)
11/04/2012	<a href="#">153</a>	REPLY in support of EX PARTE APPLICATION for Order for Allowing the Submission of Additional Evidence on the Pending Motions for Summary Judgment; Memorandum of Points and Authorities in Support Thereof <a href="#">150</a> filed by Plaintiff DatCard Systems Inc. (Smith, Bridget) (Entered: 11/04/2012)
11/05/2012	<a href="#">158</a>	MINUTES OF Markman Hearing held before Judge Mariana R. Pfaelzer. The case is called and appearances are made. Court and counsel argue the matters at issue. The Trial date is vacated. The Court takes the matter under submission and its order will follow. Court Reporter: Anne Kielwasser. (cs) (Entered: 12/10/2012)
11/09/2012	<a href="#">154</a>	TRANSCRIPT ORDER as to Co-Defendant in Related Case PacsGear Inc Court Reporter. Court will contact Marc E. Hankin at Marc@HankinPatentLaw.com with any questions regarding this order. Transcript portion requested: Other: Hearing on Motions for Summary Judgment. Transcript preparation will not begin until payment has been satisfied with the court reporter/recorder. (Hankin, Marc) (Entered: 11/09/2012)
11/14/2012	<a href="#">155</a>	TRANSCRIPT ORDER as to Plaintiff DatCard Systems Inc Court Reporter. Court will contact Shirley Del Rosario at shirley.delrosario@kmob.com with any questions regarding this order. Transcript portion requested: Other: 11/5/12 Hearing on Motions for Summary Judgment. Transcript preparation will not begin until payment has been satisfied with the court reporter/recorder. (Summers, Craig) (Entered: 11/14/2012)
11/16/2012	<a href="#">156</a>	TRANSCRIPT for proceedings held on 11-05-12 @ 11:00. Court Reporter/Electronic Court Recorder: Anne Kielwasser, phone number 213/894-2969 - AKtranscripts.com. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Electronic Court Recorder before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Notice of Intent to Redact due within 7 days of this date. Redaction Request due 12/7/2012. Redacted Transcript Deadline set for 12/17/2012. Release of Transcript Restriction set for 2/14/2013. (Kielwasser, Anne) (Entered: 11/16/2012)
11/16/2012	157	NOTICE OF FILING TRANSCRIPT filed for proceedings 11-5-12 @ 11:00 re Transcript <a href="#">156</a> THERE IS NO PDF DOCUMENT ASSOCIATED WITH THIS ENTRY.(Kielwasser, Anne) TEXT ONLY ENTRY (Entered: 11/16/2012)
03/12/2013	<a href="#">159</a>	ORDER by Judge Mariana R. Pfaelzer: denying <a href="#">57</a> DatCard's motion to preclude the expert opinion testimony of Steven Horii and Ian Jestice regarding obviousness of the asserted patents. (lom) (Entered: 03/12/2013)
03/12/2013	<a href="#">160</a>	ORDER by Judge Mariana R. Pfaelzer: granting in part and denying in part <a href="#">71</a> Pacsgear Inc.'s Motion for Summary Judgment. The Court determines that the '422 patent claims are obvious in light of the Samari-Kermani reference. Genuine issues of material fact remain regarding noninfringement. Consequently, Pacsgear's motion for summary judgment is granted as to invalidity but denied as to noninfringement.







		Rules of Civil Procedure filed by Plaintiff DatCard Systems Inc. (Attachments: # <a href="#">1</a> Proposed Order [Proposed] Final Judgment Under Rule 54(b) of the Federal Rules of Civil Procedure)(Stewart, Paul) (Entered: 05/28/2013)
05/31/2013	<a href="#">167</a>	REPORT ON THE DETERMINATION OF AN ACTION Regarding a Patent or Trademark. (Closing) (Attachments: # <a href="#">1</a> Order Granting Pacegear Inc.'s Motion for Summary Judgment) (gk) (Entered: 05/31/2013)
06/06/2013	<a href="#">168</a>	FINAL JUDGMENT UNDER RULE 54(b) OF THE FEDERAL RULES OF CIVIL PROCEDURE by Judge Mariana R. Pfaelzer: Upon Stipulation <a href="#">166</a> , (1) Judgment is entered in favor of Pacsgear on DatCard's claim of infringement of the '164 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '164 Patent; (2) Judgment is entered in favor of Pacsgear on DatCard's claim of infringement of the '597 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '597 Patent; (3) Judgment is entered in favor of Pacsgear on DatCard's claim of infringement of the '174 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '174 Patent; (4) Judgment is entered in favor of Pacsgear on DatCard's claim of infringement of the '157 Patent, based upon this Court's finding on summary judgment that the asserted claims of the '157 Patent are invalid under 35 U.S.C. Section 103; (5) Judgment is entered in favor of Pacsgear on DatCard's claim of infringement of the '422 Patent, based upon this Court's finding on summary judgment that the asserted claims of the '422 Patent are invalid under 35 U.S.C. Section 103; (6) Judgment is entered in favor of Pacsgear on Pacsgear's counterclaim for a declaration of non-infringement of the '164 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '164 Patent; (7) Judgment is entered in favor of Pacsgear on Pacsgear's counterclaim for a declaration of non-infringement of the '597 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '597 Patent; (8) Judgment is entered in favor of Pacsgear on Pacsgear's counterclaim for a declaration of non-infringement of the '174 Patent, based upon this Court's finding on summary judgment that Pacsgear has not infringed the '174 Patent; (9) Judgment is entered in favor of Pacsgear on Pacsgear's counterclaim for a declaration of invalidity of the '157 Patent, based upon this Court's finding on summary judgment that the asserted claims of the '157 Patent are invalid under 35 U.S.C. Section 103; and (10) Judgment is entered in favor of Pacsgear on Pacsgear's counterclaim for a declaration of invalidity of the '422 Patent, based upon this Court's finding on summary judgment that the asserted claims of the '422 Patent are invalid under 35 U.S.C. Section 103. (11) There are two remaining undecided claims: (a) PacsGear's counterclaim for a declaration of invalidity of the '164 Patent, '597 Patent, and '174 Patent, and (b) Pacsgear's counterclaim for a declaration of unenforceability of all five patents in suit due to inequitable conduct. (12) DatCard has stated that it plans to appeal some of this Court's summary judgment rulings. The Court concurs and hereby stays the proceedings on the two remaining claims identified above, pending appeal. Any motions for attorneys' fees are also stayed and need not be filed, pending appeal. (13) PacsGear, as prevailing party, is entitled to recover its costs, pursuant to Rule 54(d), in an amount to be determined. (gk) (Entered: 06/07/2013)
06/10/2013	<a href="#">169</a>	NOTICE OF APPEAL to the Federal Circuit filed by Plaintiff DatCard Systems Inc. Appeal of Order, <a href="#">145</a> , Order on Motion for Summary Judgment <a href="#">165</a> , Order on Motion for Summary Judgment, <a href="#">164</a> , Judgment,,,,,,,,,,,,, <a href="#">168</a> , Order on Motion for Summary Judgment, <a href="#">160</a> , Order on Motion for Partial Summary Judgment,, <a href="#">163</a> (Appeal fee of \$455 receipt number 0973-12240665 paid.) (Stewart, Paul) (Entered: 06/10/2013)



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<b>PACER Service Center</b>			
<b>Transaction Receipt</b>			
06/24/2013 11:19:20			
<b>PACER Login:</b>	km0071	<b>Client Code:</b>	DATCARL.067LA
<b>Description:</b>	Docket Report	<b>Search Criteria:</b>	8:10-cv-01288-MRP-VBK End date: 6/24/2013
<b>Billable Pages:</b>	18	<b>Cost:</b>	1.80



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# THE UNITED STATES OF AMERICA

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United States Patent and Trademark Office

August 19, 2011

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM  
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U.S. PATENT: 7,302,164

ISSUE DATE: November 27, 2007

By Authority of the  
Under Secretary of Commerce for Intellectual Property  
and Director of the United States Patent and Trademark Office

P. SWAIN  
Certifying Officer







US007302164B2

(12) **United States Patent**  
**Wright et al.**

(10) **Patent No.:** **US 7,302,164 B2**

(45) **Date of Patent:** **Nov. 27, 2007**

(54) **SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA**

(75) Inventors: **Ken Wright**, Chino Hills, CA (US);  
**Chet LaGuardia**, Rancho Santa Margarita, CA (US)

(73) Assignee: **Datcard Systems, Inc.**, Irvine, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 945 days.

(21) Appl. No.: **09/761,795**

(22) Filed: **Jan. 17, 2001**

(65) **Prior Publication Data**

US 2002/0048222 A1 Apr. 25, 2002

**Related U.S. Application Data**

(60) Provisional application No. 60/181,985, filed on Feb. 11, 2000.

(51) **Int. Cl.**  
**H04N 5/91** (2006.01)

(52) **U.S. Cl.** ..... **386/95**; 386/112; 386/126

(58) **Field of Classification Search** ..... 386/46,  
386/95, 125, 126; 600/407; 709/219; 705/2  
See application file for complete search history.

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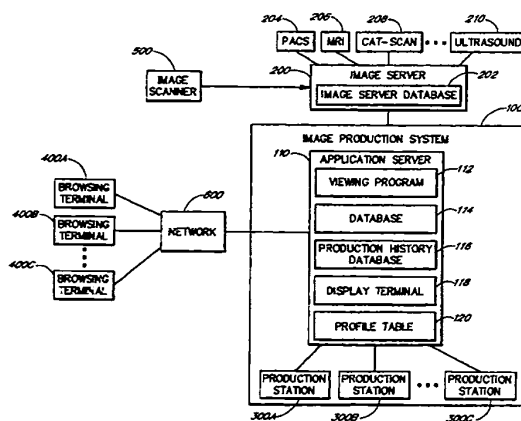
*Primary Examiner*—Huy Nguyen

(74) *Attorney, Agent, or Firm*—Knobbe, Martens Olson & Bear LLP

(57) **ABSTRACT**

This application discloses a system for recording medical image data for production on a portable digital recording medium such as CDs and DVDs. This system includes a receiving module, a processing module and an output module, with viewing program for viewing medical image data stored on the portable digital recording medium. It also discloses a method of storing medical image data on a portable digital recording medium, including the steps of receiving the medical image data, processing the data and storing the data on the portable digital recording medium, with a viewing program for viewing medical image data stored on the portable digital recording medium. It further discloses a method of selecting medical image data for recording on a portable digital recording medium, including the steps of connecting a browsing terminal to a computer database that stores the medical image data, selecting a first set of the medical image data from the computer database, and recording the selected first set of medical image data on the portable digital medium, with a viewing program for viewing the medical image data stored on the portable digital recording medium. It also discloses the method and system of retrieving medical image data that are related to the received/selected original medical image data, and recording the original and related medical image data on a portable digital recording medium.

**27 Claims, 5 Drawing Sheets**





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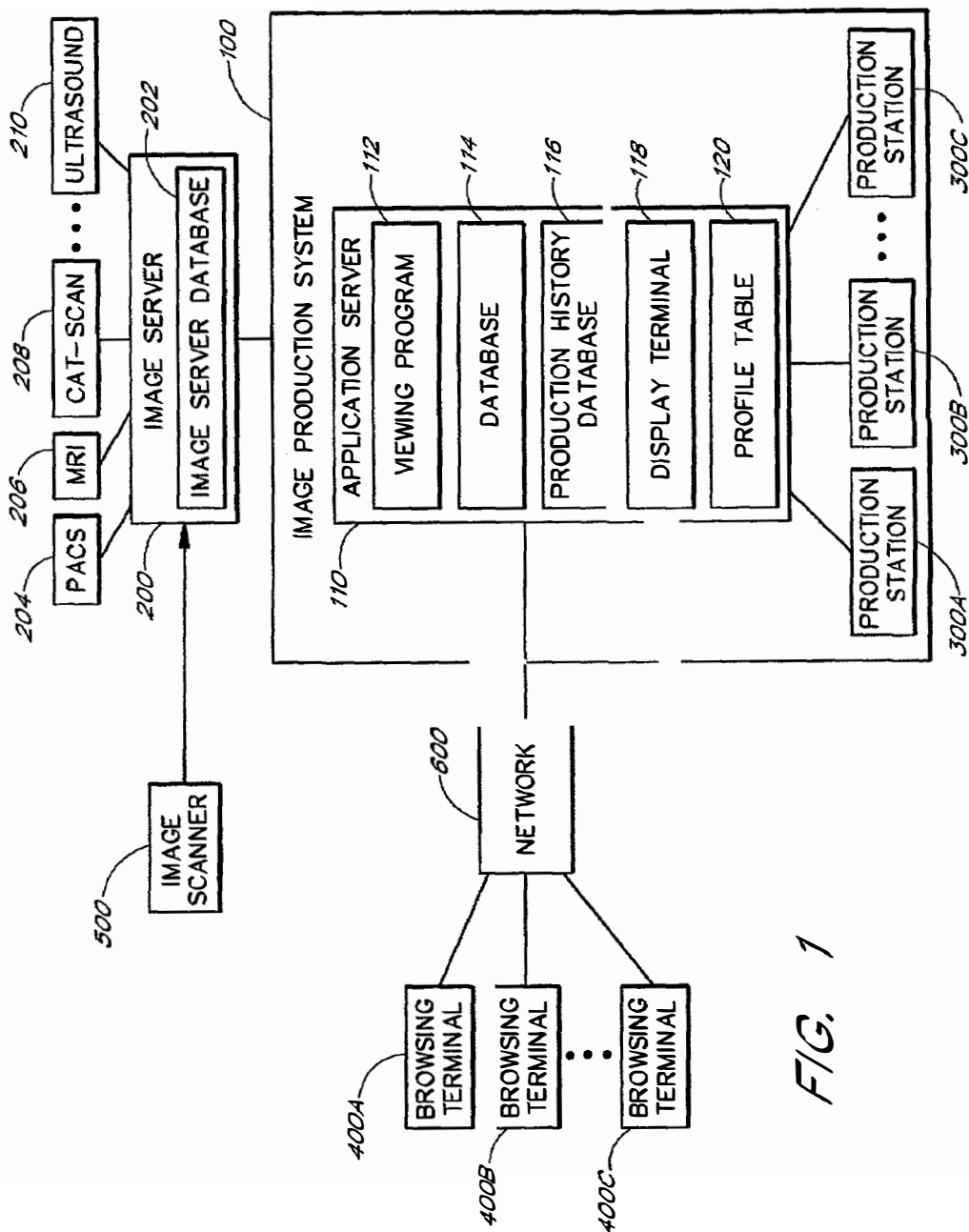


FIG. 1



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250		252		254
IMAGE INPUT DEVICES	FIELDS AUTO-PRODUCE 1	TARGET PRODUCTION STATION	RELATED DATA STORAGE	
MRI MACHINE I	YES	PRODUCTION STATION A	PACS 1	
MRI MACHINE II	NO			
ULTRASOUND MACHINE I	YES	PRODUCTION STATION B	PACS 1, PACS 2	

FIG. 2



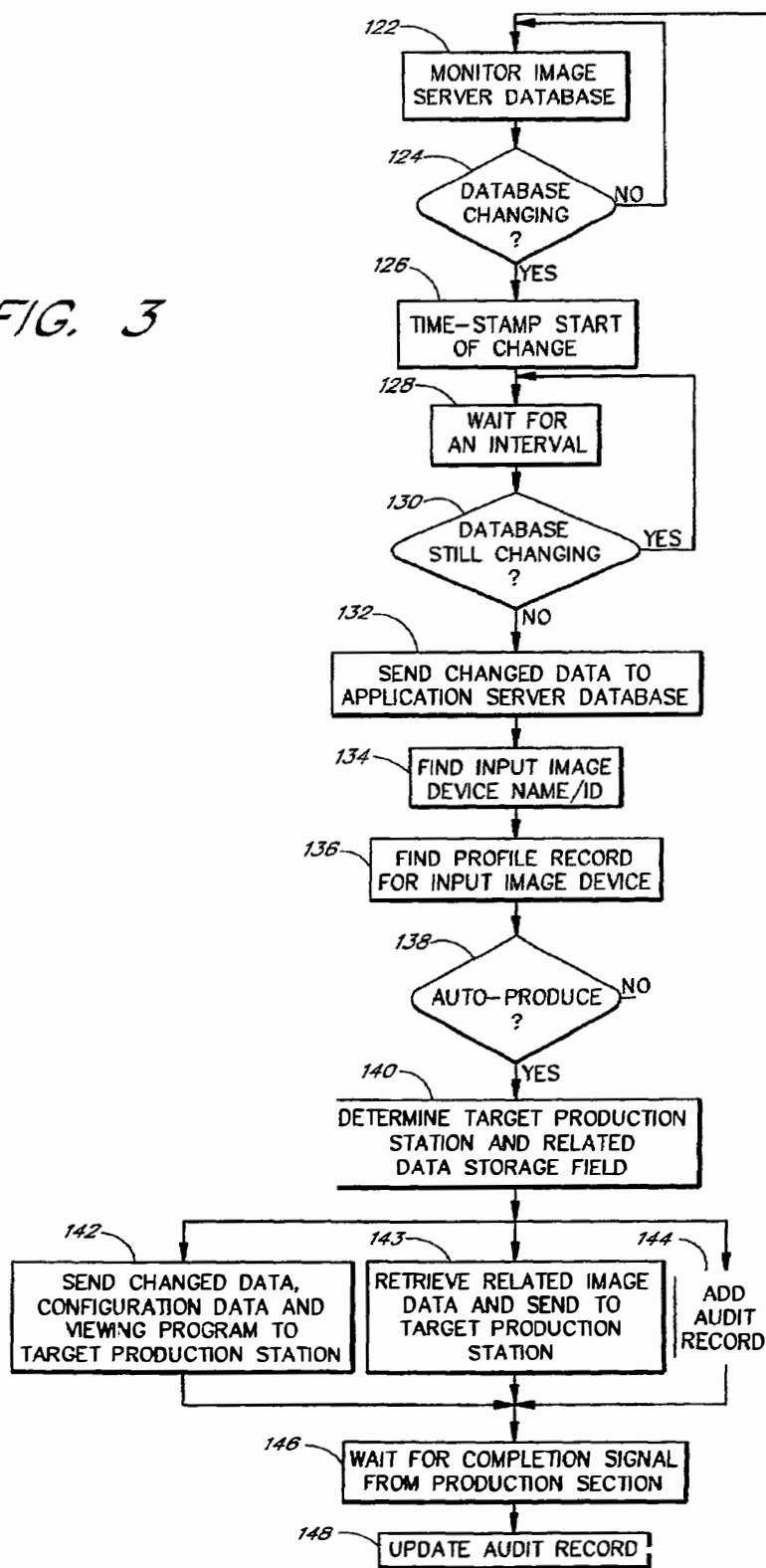
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FIG. 3





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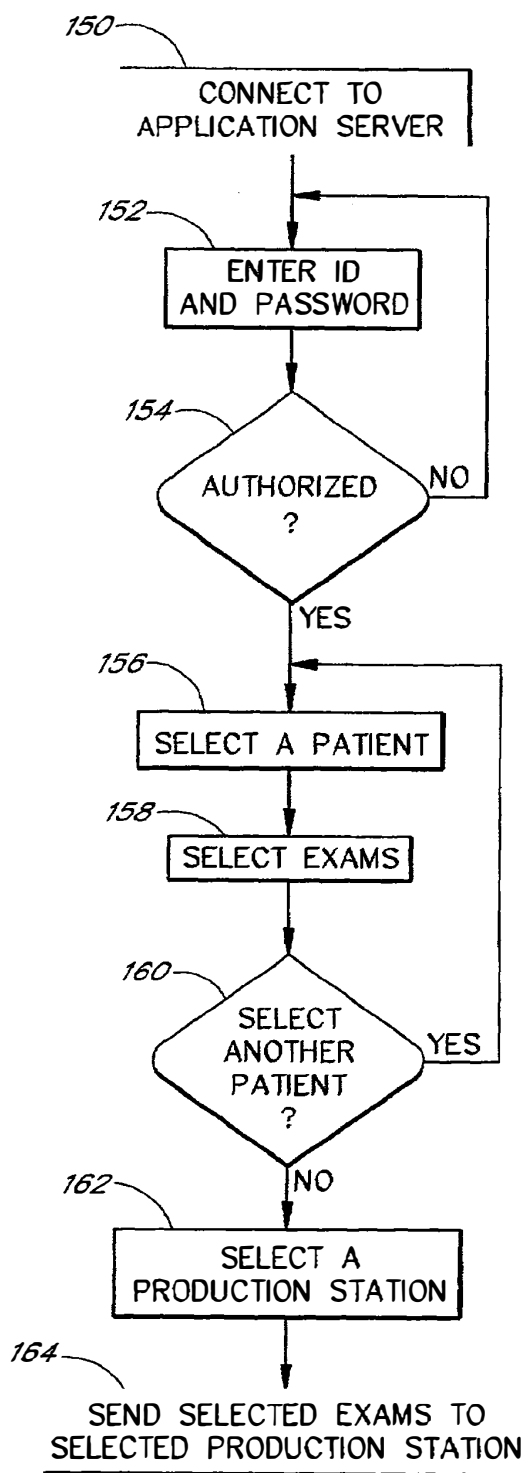


FIG. 4

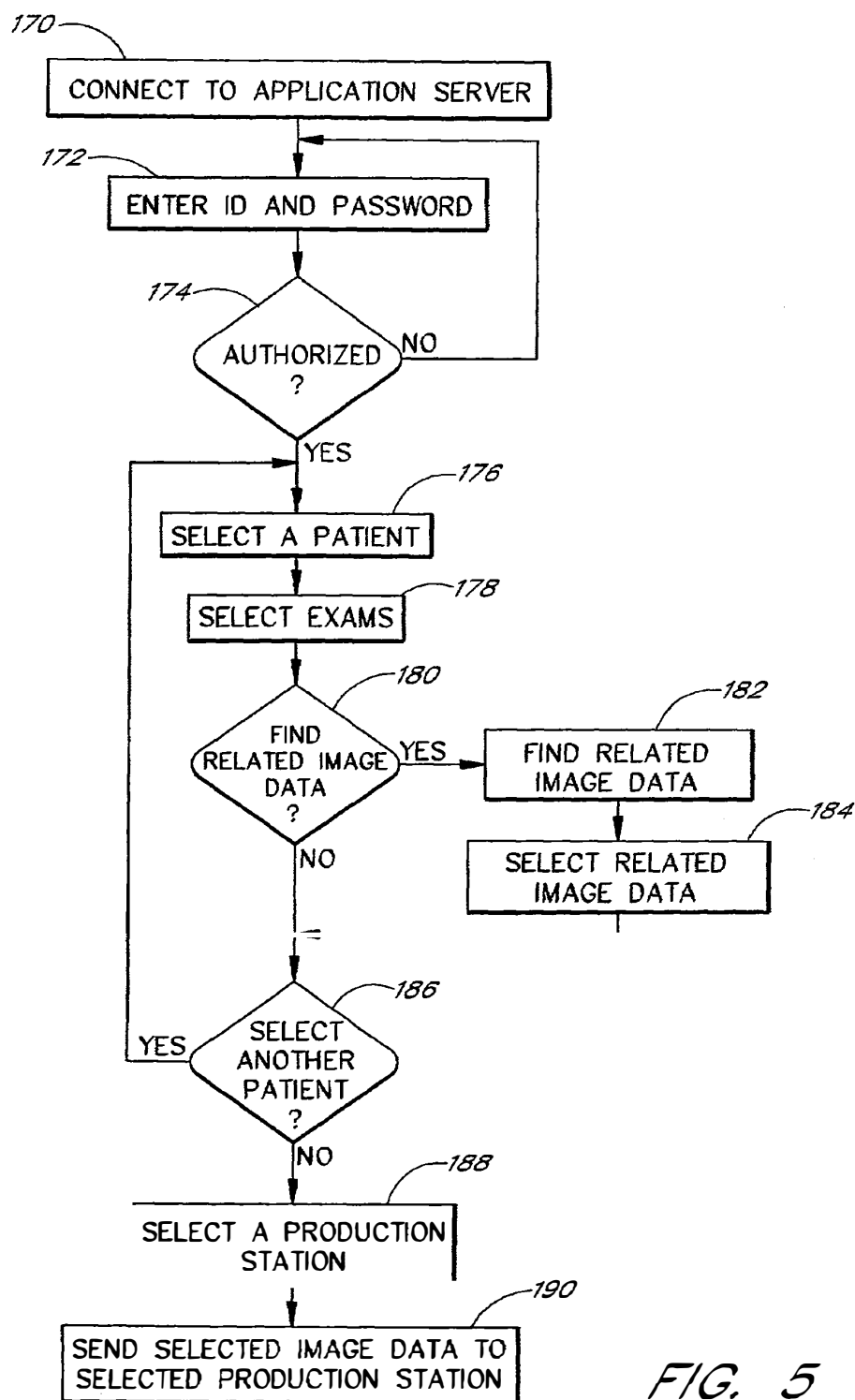


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# 1

## SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA

### CROSS REFERENCE TO RELATED APPLICATIONS

This non-provisional application claims priority date from the provisional patent application Ser. No. 60/181,985, titled "Medical Information System" and filed Feb. 11, 2000.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

This invention relates to a system and method for the production of medical image data on portable digital recording media such as compact discs. More particularly, it relates to a system and method for receiving medical image data, processing medical image data, and transmitting medical image data to be recorded on a portable digital recording medium.

#### 2. Description of the Related Art

Since the invention of the x-ray film, film has been the predominant multipurpose medium for the acquisition, storage, and distribution of medical images. However, the storage and distribution of film often requires considerable expenses in labor and storage space.

Today's modern hospitals utilize computer-aided imaging devices such as Computed Tomography (CT), Digital Subtracted Angiography, and Magnetic Resonance Imaging (MRI). These digital devices can generate hundreds of images in a matter of seconds. Many hospitals require these images to be printed on film for storage and distribution. To print complete sets of medical images from these digital devices, the cost in film material, storage space, and management efforts is often very high.

Some radiology departments have installed digital image storage and management systems known as PACS (Picture Archive Communication Systems). PACS are capable of storing a large amount of medical image data in digital form. PACS are made by manufacturers including GE, Siemens, and Fuji.

To ease the communication of data, the DICOM (Digital Imaging and Communications in Medicine) standard was developed by ACR-NEMA (American College of Radiology-National Electrical Manufacturer's Association) for communication between medical imaging devices and PACS. In addition to the examined images, patient demographics, and exam information such as patient name, patient age, exam number, exam modality, exam machine name, and exam date can also be stored and retrieved in DICOM compatible data format. A DICOM file stores patient and exam information in the header of the file, followed by the exam images. PACS store medical image data in DICOM format.

Digital medical image data can be stored on PACS and distributed using the Internet. However, many physicians' offices do not have the bandwidth suitable for fast download of medical image data. The concerns for medical data privacy and Internet security further reduce the desirability of Internet distribution.

### SUMMARY OF THE INVENTION

The claimed system allows for digital medical image data to be produced on a portable digital recording medium such as a CD. A CD containing the medical image data can be

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distributed to physicians, hospitals, patients, insurance companies, etc. One embodiment of the claimed system allows for medical image data to be placed on a CD along with a viewing program, so that a user can use any computer compatible with the CD to view the medical image data on the CD. One embodiment of the claimed system allows for searching medical exam data that are related and placing such data on the same CD.

One embodiment of the claimed system comprises a receiving module configured to receive medical image data, a processing module configured to process the received medical image data, and an output module configured to transmit the processed medical image data to a production station configured to produce the transmitted medical image data on portable digital recording medium, such as a CD. In one embodiment, the output module transmits a viewing program configured to view medical image data to the production station so that the viewing program is produced on the same CD as the medical image data. In another embodiment, the CD already contains the viewing program before the medical image data is transmitted to the CD production station.

In one embodiment of the claimed system, the processing module is configured to create and store audit information of the portable digital recording medium produced by the production station.

In another embodiment of the claimed system, the processing module is configured to identify the originating image input device of the received medical image data, and determine, on the basis of the originating image input device, whether to transmit the received medical image data to a production station. The processing module also selects, on the basis of the originating image input device, one of multiple production stations as the target production station.

Yet another embodiment of the claimed system is configured to retrieve medical image data that are related to the received medical image data, and transmit the retrieved related image data to the production station. In one embodiment, exam images of the same patient are considered related. In another embodiment, exam images of the same patient and the same modality are considered related. For example, two x-ray exams on the left hand of the same patient are considered related. In yet another embodiment, exam images of the same patient, the same modality and taken within a specified date range are considered related. For example, two x-ray exams on the left hand of the same patient taken within a two-month period are considered related. A hospital may also determine other scenarios of relatedness.

One claimed method comprises the steps of connecting a browsing terminal to a computer database configured to store medical image data, selecting medical image data from medical image data stored on the database, and recording the selected medical image data on portable digital recording medium. In one embodiment, the claimed method also comprises a step of recording a viewing program configured to view medical image data on the portable digital recording medium.

One embodiment of the claimed method further comprises the steps of finding and retrieving medical image data that are related to the selected medical image data, and recording related image data to portable digital recording medium.



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## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates one embodiment of an image production system comprising an application server and portable digital recording medium production stations.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table.

FIG. 3 illustrates a process of receiving image data from image server, processing received image data, and transmitting such data to the production station. This process also retrieves and transmits related image data for production.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server, with the option of selecting and ordering the production of related image data.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates one embodiment of an image production system 100 comprising an application server 110 and one or more portable digital recording medium production stations 300A, 300B and 300C. In the preferred embodiment, the production stations 300A, 300B and 300C are CD (Compact Disc) production stations. Digital portable recording medium comprises CDs and DVDs (Digital Versatile Disc or Digital Video Disc). CDs may comprise CD-ROM (Compact Disc Read Only Memory), CD-R (Compact Disc Recordable), and CD-RW (Compact Disc Recordable and Writable). DVDs may comprise DVD-ROM (DVD Read Only Memory), DVD-R (DVD Recordable) and DVD-RAM (a standard for DVDs that can be read and written many times). Thus, although the following description refers primarily to CDs, those of ordinary skill in the art will understand that any suitable portable digital recording medium can be substituted for CDs.

The application server 110 is connected to one or more physician browsing terminals 400A, 400B and 400C through a computer network 600. Each physician browsing terminal 400A, 400B or 400C comprises a browsing program such as Internet Explorer or Netscape Communicator. Physicians or their assistants launch the browsing program to access the application server 110 through the network 600 in order to select medical image data stored on the application server database 114 to be produced by a production station 300A, 300B or 300C. In the preferred embodiment, the physician browsing terminals 400A, 400B and 400C are connected to the application server through an Intranet. One embodiment of the Intranet utilizes TCP/IP network protocol. The Intranet can connect one radiology department, multiple departments within a hospital, or multiple hospitals. In another embodiment the browsing terminals 400A, 400B and 400C are connected to the application server 110 through the Internet.

Still referring to FIG. 1, the application server 110 is also connected to an image server 200. The image server 200 is further connected to image input devices such as PACS 204, MRI machines 206, CT-scan machines 208, ultrasound machines 210, etc. In the preferred embodiment, the image server 200 is a DICOM image server configured to receive and store medical image data in DICOM format. In operation, the image server 200 receives medical image data from image input devices such as PACS 204, MRI machines 206, CT-scan machines 208 and ultrasound machines 210 and

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stores such image data in the image server database 202. A high-resolution image scanner 500 is also connected to the image server 200, so that medical image data stored on film can be scanned on the image scanner 500, transmitted to the image server 200 and stored in the image server database 202. In one embodiment, the image scanner 500 also converts the scanned image to DICOM format. The application server 110 receives input image data from the image server database 202, processes the received image data, and sends the image data to one of the production stations 300A, 300B or 300C to produce CDs.

The application server 110 comprises a viewing program 112, an application server database 114 that stores image data received from the image server 200, a production history database 116 that stores audit records on each CD produced, a display terminal 118 for programming and operating the application server 110 by a programmer or physician, and an image input device profile table 120.

Still referring to FIG. 1, the viewing program 112 is configured to allow users to read and manipulate medical image data. The viewing program 112 comprises multiple image manipulation functions, such as rotating images, zooming in and zooming out, measuring the distance between two points, etc. The viewing program 112 also allows users to read the patient demographics and exam information associated with the image data. The viewing program 112 used in the preferred embodiment is produced by eFilm Medical Inc. located in Toronto, Canada. The viewing program 112 used in the preferred embodiment is an abbreviated version with fewer functions and takes less storage space, in order to maximize the storage space for image data on a CD. The image server 200 used in the preferred embodiment is also made by eFilm Medical Inc.

The CD production stations 300A, 300B and 300C in the preferred embodiment are produced by Rimage Corporation in Edina, Minn. Details about the Rimage CD production stations can be found in U.S. Pat. Nos. 5,542,768, 5,734,629, 5,914,918, 5,946,276, and 6,041,703, which are incorporated herein by reference in their entirety.

The application server 110 in the preferred embodiment runs on a personal computer running a 400 MHz Celeron or Pentium II/III chip, with Windows 98 or NT as the operating system.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table 120. The image input device profile table 120 contains a profile record for each image input device. Each image input device's profile record comprises: (1) an "auto-produce" logical field 250 indicating whether medical image data from this image input device should be produced on CD automatically by the image production system 100, (2) a "target production station" field 252 identifying one of the production stations 300A, 300B or 300C on which medical image data is to be produced, and (3) a "related data storage" 254 field identifying the medical image data storage units in which to search for the related image data. A medical image data storage unit is a storage unit that stores medical image data and is connected to the application server 110. In one embodiment, a medical image data storage unit is connected to the application server 110 through the image server 200. In the preferred embodiment, PACS 204 is such a medical image data storage unit.

In FIG. 2, the sample profile table 120 contains profile records for MRI Machine I, MRI Machine II, and Ultrasound Machine I. For MRI Machine I, the "auto-produce" field 250 contains a "yes" value, directing the image production system 100 to automatically produce image data originating from MRI Machine I on portable digital record-



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ing medium. Its "target production station" field 252 contains a "Production Station A" value, directing the image production system 100 to produce image data originating from MRI Machine I on production station A. Its "related data storage" field 254 is "PACS I", directing the image production system 100 to retrieve related medical image data from PACS I. For MRI Machine II, the "auto-produce" field 250 is "no", directing the image production system 100 to not automatically produce image data originating from MRI Machine II on portable digital recording medium. Since image data from MRI Machine II will not be automatically produced, the "target production station" field 252 and the "related data storage" field 254 are irrelevant. For Ultrasound Machine I, the "auto-produce" field 250 is "yes", and its "target production" field 252 is "Production Station B". Its "related data storage" field 254 contains a value of "PACS I, PACS II", directing the image production system 100 to search PACS I and PACS II for related medical image data.

FIG. 3 illustrates a process of the application server 110 receiving image data from the image server 200, processing the received image data, and transmitting such data to the production station 300A, 300B or 300C. The application server 110 continuously monitors the image server database 202 in step 122. In one embodiment, the application server continuously "pings" the network address corresponding to the image server 200 on the network that connects the application server 110 with the image server 200.

Still referring to FIG. 3, the application server 110 determines if the image server database 202 is changing, in step 124. In the preferred embodiment, the application server 110 makes that determination by detecting whether the image server database 202 is increasing in size. If there is no change in the image server database 202, then the application server 110 returns to step 122 to continue monitoring. If there is change in the image server database 202, then the application server 110 proceeds to step 126 and time-stamps the moment that the change started. The application server 110 then proceeds to step 128 and waits for an interval, typically 35 to 65 seconds. After the interval, the application server 110 checks whether the image server database 202 is still changing, in step 130. If the image server database 202 is still changing then the application server 110 returns to step 128 to wait for another interval. If the image server database 202 is no longer changing, then the application server 110 proceeds to step 132 and copies the data changed since the time-stamped moment. This changed data is copied from the image server database 202 to the application server database 114.

The application server 110 proceeds to step 134 and finds the input image device name or identification number from the newly received image data. In the preferred embodiment, image data from the image server database 202 are stored in DICOM format, and the input image device name or identification number is stored in the header of the DICOM format image data file. The input image device name/ID indicates the origin of the newly received data. The application server 110 proceeds to step 136 and uses the found input image device name/ID to find a corresponding profile record in the image input device profile table 120. If the profile record has an "auto-produce" field 250 with a "no" value, the application server 110 returns from step 138 to step 122 to continue monitoring the image server database 202. If the "auto-produce" field 250 contains a "yes" value, the application server 110 proceeds from step 138 to step 140, and determines the target production station 300A, 300B or 300C from the "target production station" field 252

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of the profile record. In step 140, the application server 110 also determines the value in the "related data storage" field 254 of the profile record.

Still referring to FIG. 3, in step 142, the application server 110 sends a copy of the newly received data, along with a copy of the viewing program 112, to the target production station 300A, 300B or 300C identified in step 140. With the viewing program attached, the image data on each CD produced by the target production station 300A, 300B or 300C can be viewed on any computer that accepts the CD, regardless of whether that computer has its own viewing program installed. In one embodiment, the data received in step 132 is stored in the application server database 114 before it is transmitted to the target production station 300A, 300B or 300C in step 142. In another embodiment, the application server 110 transmits the data received in step 132 to the target production station 300A, 300B or 300C, without storing a copy of the data in the application server database 114.

In one embodiment, the application server 110 does not send a copy of the viewing program 112 to the target production station during step 142. Rather, the application server 110 sends a copy of the received medical image data to the production station 300A, 300B or 300C to be recorded on pre-burned CDs. Each pre-burned CD contains a viewing program already recorded onto the CD before step 142.

In step 142, the application server 110 also sends configuration data to the target production station 300A, 300B or 300C. The configuration data comprises a label-printing file comprising the specification for printing labels on top of the CDs, and a "number of copies" value indicating the number of copies of CDs to be produced. A typical specification in the label-printing file may specify information such as patient name, exam modality, hospital name, physician name, production date, etc. to be printed by the target production station as a label on the top of each CD produced.

Still referring to FIG. 3, in step 143, the application server 110 searches the application server database 114 for image data related to the newly received data. The application server 110 then searches the PACS systems identified in the "related data storage" field 254 in step 140 for data related to the newly received data. Some PACS systems each comprise a primary image data storage and an archive image data storage, and the application server 110 searches both the primary image data storage and the archive image data storage on these PACS systems. The application server 110 is connected to the PACS systems through the image server 200. The application server 110 retrieves found related data from the PACS systems and stores a copy of such found related data in the application server database 114. The application server 110 sends a copy of related data that are found from the application server database 114 or the PACS systems to the target production station 300A, 300B or 300C. The medical image data originally received in step 132 and the related medical image data are produced by the target production station 300A, 300B or 300C on the same CDs for comparative study.

For each CD to be produced, the application server 110 adds one audit record to the production history database 116 in step 144. The new audit record comprises the identification number of the CD and other relevant information about the CD, such as the physician who requested the production (if any), and the names of the patients whose exam images are on that CD.

Steps 142, 143 and 144 may be executed immediately before, concurrent with, or immediately after one another.



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The target production station 300A, 300B or 300C produces the CDs containing the medical image data and the viewing program sent to it, and prints a label on top of every CD, corresponding to the specification in the label-printing file. The number of CDs produced corresponds to the "number of copies" number sent by the application server 110 in step 142. When the target production station has produced the CDs, the production station returns a "completed" signal to the application server 110. The application server 110 waits for this signal in step 146.

Still referring to FIG. 3, in step 148, the application server 110 updates the audit records in the production history database 116 that were created in step 144. For each CD produced, the application 110 server updates the date and time of production for that CD's audit record. The application server 110 also updates the status value for that CD's audit storage record from "processing" to "successful". The application server 110 then continues monitoring the image server database 202 as in step 122.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110. A user, typically a physician or physician's assistant, accesses the application server database 114 from a browsing terminal 400A, 400B or 400C connected to a network 600. In one embodiment, the user launches a browser such as Microsoft Internet Explorer or Netscape Communicator, and specifies a network address corresponding to the application server 110, in step 150. In another embodiment, the user clicks a pre-defined icon that directly launches a browser connecting to the application server 110. The application server 110 prompts the user to enter a password or an identification name coupled with a password, in step 152. The application server 110 checks if the entered identification/password is authorized in step 154. If the entered identification/password is not authorized the user is returned to step 152 to re-enter the identification/password, or disconnected from the application server 110. If the entered identification/password is authorized then the user is allowed access to the application server database 114 and the application server 110 proceeds to step 156.

Still referring to FIG. 4, in step 156 the user is prompted to select a patient from a list of patients with exam images in the application server database 114. The user is then shown a list of the selected patient's exams, and is prompted to select one or more exams of that patient, in step 158. When the user indicates that he/she has completed selecting all exams for that patient, the user is asked in step 160 whether to select another patient from the list of patients. If the user answers "yes", the user is returned to step 156 to select another patient. If the user answers "no", the user proceeds to step 162.

In another embodiment, when a user selects a patient, all exams belonging to that patient will be automatically selected without prompting for user selection. In yet another embodiment, the user is not prompted to select patients, but is only prompted to select exams from a list of all exams for all patients contained in the application server database 114.

When the user indicates that he/she has completed selecting, the user is prompted to select a production station from a list of production stations 300A, 300B and 300C in step 162. The user is also prompted to enter additional label text to be printed as labels on the CDs to be produced, to supplement the text printed according to the specification of the label-printing file. The user can advantageously select the production station located closest to his/her office. In one embodiment, only one production station is connected to the

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application server 110, and the lone production station will be the selected production station without prompting for user selection.

In one embodiment, the user is also prompted to select the number of copies of CDs to be produced. In another embodiment, the number of copies is set at one without prompting for user direction. As described above in connection with FIG. 3, in step 164, the application server 110 sends a copy of the image data of the selected exams for the selected patients to the selected production station, along with a copy of the viewing program 112, and configuration data comprising a label-printing file, additional label text, and a number indicating the number of copies of CDs to be produced. The production station 300A, 300B or 300C then produces one or more CDs containing the selected exams for the selected patients and the viewing program, with labels printed on top of the CDs according to the specification in the label-printing file and the user-entered additional label text.

In another embodiment, a user accesses the application server database 114 not from a browsing terminal 400A, 400B or 400C, but directly from the display terminal 118. In this embodiment the user directly proceeds from step 152. In this embodiment the user is typically a programmer or operator of the image production system 100.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110, with the additional option of selecting and ordering the production of related data for comparative study. As described above in connection with FIG. 4, a user connects to the application server 110 from a browsing terminal 400A, 400B or 400C in step 170. The user enters identification information and a password in step 172. Step 174 determines whether the user is authorized to access the application server database 114. If authorized, the user is prompted to select a patient in step 176, and selects exams of the selected patient in step 178. The user is then asked in step 180 if he/she desires to find related data of that patient for comparative study.

If the user answers yes, the application server 110 then searches for related data. The application server 110 finds the image input device profile table 120 profile record corresponding to the image input device from which the selected data originates, identifies the list of PACS systems stored in the "related data storage" field 254, and searches these PACS systems for related data. In another embodiment, once the user has selected a patient/exam combination, the application server 110 automatically searches for related data without asking for user direction. In this embodiment, the application server 110 alerts the user if related data are found. In one embodiment, the application server 110 also searches the application server database 114 for related medial image data.

Still referring to FIG. 5, the user is then prompted to select all or some of the related data from the list of found related data for production, in step 184. In another embodiment, all found related data are automatically selected by the application server 110 for production, without prompting for user selection.

The user is then prompted to select another patient in step 186. After the user has completed selecting all patients, the user is prompted to select a CD production station 300A, 300B or 300C in step 188. The user is also prompted to enter additional label text. In step 190, the application server 110 then sends a copy of the original and selected related data, along with a copy of the viewing program 112, a number indicating the number of copies to be produced, additional



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label text, and a label-printing file to the selected production station 300A, 300B or 300C for production.

The above paragraphs describe the application server 110 with one database 114 for image data storage. In another embodiment, the application server 110 includes two data-  
bases for image data storage: a new data database and a  
storage data database. The new data database stores only the  
most recent batch of new data just received from the image  
server 200. After the data in the new data database is sent to  
a production station 300A, 300B or 300C, the application  
server 110 erases data in the new data database. The storage  
data database stores all data that has ever been received from  
the image server database 202. In the processes described by  
FIG. 4 and FIG. 5, a user selects images for production from  
the storage data database.

Several modules are described in the specification and the claims. The modules may advantageously be configured to reside on an addressable storage medium and configured to execute on one or more processors. The modules may include, but are not limited to, software or hardware components that perform certain tasks. Thus, a module may include, for example, object-oriented software components, class components, processes methods, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables. Modules may be integrated into a smaller number of modules. One module may also be separated into multiple modules.

Although the foregoing has been a description and illustration of specific embodiments of the invention, various modifications and changes can be made thereto by persons skilled in the art, without departing from the scope and spirit of the invention as defined by the following claims.

What is claimed is:

1. A system for selecting and automatically recording medical image data onto a data storage medium, the system being connected to a medical image server, the system comprising:

- an application server;
- a plurality of production stations;
- a plurality of browsing terminals;
- a network connecting the application server, the plurality of production stations and the plurality of browsing terminals, wherein the application server is configured to receive medical image data from the medical image server, the medical images received being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images, the application server further comprising:
  - a selection module configured to allow a user to select selected medical image data via at least one of (a) a selected one of the plurality of browsing terminals and (b) the application server,
  - a search module configured to automatically search the medical image server for related medical image data that is related to the selected medical image data,
  - a configuration data module configured to allow a user to input identifying information relating to the selected medical image data,
  - a production station selection module configured to allow a user to select one of the plurality of production stations, wherein the selected production station is configured to receive the selected medical image data and the related medical image data to produce a data storage medium that has recorded on it the selected and the related medical image data, the

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selected medical image data being recorded on the data storage medium in the standard medical imaging format, and

an audit module configured to automatically provide an auditable trail of the selected medical image data;

- a viewing program for the standard medical imaging format that is recorded on the data storage medium, and that is configured to allow viewing of medical image data stored on the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images; and
- a label automatically printed and applied to the data storage medium at the production station, the label containing the identifying information.

2. The system of claim 1, wherein the data storage medium is an optical disk.

3. The system of claim 1, wherein the auditable trail of the selected medical image data includes a record of when the selected medical image data and the related medical image data were recorded onto the data storage medium.

4. The system of claim 1, wherein the medical image server is configured to provide medical image data to the application server in response to generation of medical image data by an imaging modality coupled to the medical image server.

5. The system of claim 4, wherein the imaging modality is an image scanner configured to generate medical image data in a DICOM-compatible format from a film.

6. The system of claim 1, wherein the application server further comprises a user authentication module configured to authenticate a user's identification before the user is allowed to access the selection module.

7. The system of claim 1, wherein the application server further includes a database configured to store medical image data received from the medical image server.

8. The system of claim 7, wherein the selection module is further configured to provide the user with a listing of patients having medical image data stored in the database.

9. A system comprising:

- a medical image server configured to receive medical image data that is generated by a plurality of imaging modalities, the medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;
- a database configured to store medical image data generated by the plurality of imaging modalities;
- a plurality of browsing terminals configured to receive a user selection that defines selected medical image data;
- a search module configured to search the database for related medical image data that is related to the selected medical image data; and
- a production station that is configured to record all of the following onto a data storage medium:
  - the selected medical image data, recorded in the standard medical imaging format,
  - the related medical image data, recorded in the standard medical imaging format, and
  - a viewing program that is configured to allow viewing of the selected and the related medical image data that is recorded onto the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images.



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10. The system of claim 9, further comprising a configuration data module configured to allow a user to input identifying information relating to the selected medical image data.

11. The system of claim 10, wherein the production station is further configured to print and apply a label to the data storage medium, the label containing the identifying information.

12. The system of claim 9, further comprising an audit module that is configured to automatically provide an auditable trail of the selected medical image data.

13. The system of claim 12, wherein the auditable trail of the selected medical image data includes a record of when the selected medical image data and the related medical image data were recorded onto the data storage medium.

14. The system of claim 12, wherein the auditable trail of the selected medical image data includes identifying information corresponding to the production station used to record the selected medical image data and the related medical image data onto the data storage medium.

15. The system of claim 9, wherein the data storage medium is an optical disk.

16. A method for selecting and automatically recording medical image data onto a data storage medium, the method comprising:

receiving medical image data from a plurality of imaging modalities, the received medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;

storing the received medical image data in a database;

providing a user interface configured to receive a user selection that defines selected medical image data;

searching the database for related medical image data that is related to the selected medical image data;

recording the selected medical image data and the related medical image data onto a data storage medium using a production station, the selected medical image data being recorded on the data storage medium in the standard medical imaging format;

recording a viewing program onto the data storage medium using the production station, the viewing program being configured to allow viewing of medical image data stored on the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images;

printing a label using the production station, wherein the label includes identifying information associated with the selected medical image data; and

affixing the label to the data storage medium using the production station.

17. The method of claim 16, further comprising generating an auditable trail of the selected medical image data, wherein the auditable trail includes a record of when the selected medical image data and the related medical image data were recorded onto the data storage medium.

18. The method of claim 16, wherein the user interface is further configured to collect the identifying information from the user.

19. The method of claim 16, further comprising providing, via the user interface, a list of patients having medical image data stored in the database.

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20. The method of claim 16, wherein the plurality of imaging modalities includes an image scanner configured to generate medical image data in a DICOM-compatible format from a film.

21. The method of claim 16, wherein the data storage medium is an optical disk.

22. The method of claim 16, wherein recording the selected medical image data and the related medical image data further comprising selecting a selected production station from a plurality of production stations that are connected to the database via a computer network.

23. A system comprising:

an application server configured to receive medical image data from a medical image server, wherein the medical image data is received in a standard medical imaging format used by specialized computers configured for viewing medical images;

a plurality of production stations;

a plurality of browsing terminals; and

a network connecting the application server, the plurality of production stations and the plurality of browsing terminals;

wherein the application server comprises:

a selection module configured to allow a user to select selected medical image data via a user interface,

a search module configured to search the medical image server for related medical image data that is related to the selected medical image data, and

a production station selection module configured to allow a user to select one of the plurality of production stations, wherein the selected production station is configured to (a) receive the selected medical image data and the related medical image data, (b) produce a data storage medium that has recorded thereon in the standard medical imaging format the selected medical image data and the related medical image data, and (c) also record onto the data storage medium a viewing program for the standard medical imaging format that is configured to allow viewing of the selected medical image data and the related medical image data on widely accessible computers with standard medical imaging software for viewing medical images.

24. The system of claim 23, wherein the selection module is configured to allow the user to select selected medical image data using a selected one of the plurality of production stations or a selected one of the plurality of browsing terminals.

25. The system of claim 23, wherein the application server further comprises a configuration data module configured to allow the user to input identifying information relating to the selected medical imaging data.

26. The system of claim 25, further comprising a label applied to the data storage medium, the label containing the identifying information.

27. The system of claim 23, wherein the application server further comprises an audit module configured to provide an auditable trail of the selected medical image data.

\* \* \* \* \*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,302,164 C1  
APPLICATION NO. : 90/009347  
DATED : January 4, 2011  
INVENTOR(S) : Ken Wright et al.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 1, Line 40, in Claim 9, after "portable" insert *--digital--*.

In Column 1, Line 40, in Claim 9, delete "medium" and insert *--[medium] device that is removable from the production station--*.

In Column 1, Line 47, in Claim 9, delete "medium" and insert *-- [medium] device--*.

In Column 1, Line 67, in Claim 15, delete ":" and insert *-- ; --*.

In Column 2, Line 27, in Claim 16, delete "portable" and insert *--portable, digital--*.

In Column 2, Line 28, in Claim 16, delete "medium" and insert *--[medium] device--*.

In Column 2, Line 30, in Claim 16, delete "medium" and insert *--[medium] device--*.

In Column 2, Line 32, in Claim 16, delete "medium" and insert *--[medium] device--*.

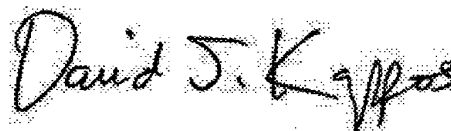
In Column 2, Line 34, in Claim 16, delete "medium" and insert *--[medium] device--*.

In Column 2, Line 40, in Claim 16, after "data;" delete "and" and insert *--[and]--*.

In Column 2, Line 41, in Claim 16, delete "medium" and insert *--[medium] device--*.

In Column 2, Line 42, in Claim 16, delete "production station." and insert *--production station; removing the data storage device from the production station.--*.

Signed and Sealed this  
Nineteenth Day of April, 2011



David J. Kappos  
Director of the United States Patent and Trademark Office





US007302164C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (7967th)**United States Patent****Wright et al.**(10) **Number:** **US 7,302,164 C1**(45) **Certificate Issued:** **Jan. 4, 2011**(54) **SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA**(75) Inventors: **Ken Wright**, Chino Hills, CA (US);  
**Chet LaGuardia**, Rancho Santa Margarita, CA (US)(73) Assignee: **Datacard Systems, Inc.**, Newport Beach, CA (US)

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(51) **Int. Cl.**  
**H04N 5/91** (2006.01)(52) **U.S. Cl.** ..... **386/95; 386/112; 386/126**(58) **Field of Classification Search** ..... None  
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**

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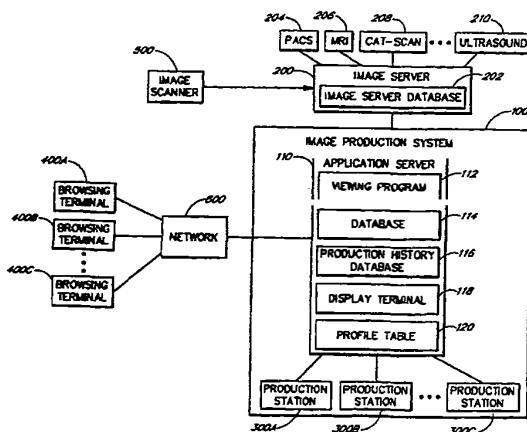
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*Primary Examiner*—Sam Rimell(57) **ABSTRACT**

This application discloses a system for recording medical image data for production on a portable digital recording medium such as CDs and DVDs. This system includes a receiving module, a processing module and an output module, with viewing program for viewing medical image data stored on the portable digital recording medium. It also discloses a method of storing medical image data on a portable digital recording medium, including the steps of receiving the medical image data, processing the data and storing the data on the portable digital recording medium, with a viewing program for viewing medical image data stored on the portable digital recording medium. It further discloses a method of selecting medical image data for recording on a portable digital recording medium, including the steps of connecting a browsing terminal to a computer database that stores the medical image data, selecting a first set of the medical image data from the computer database, and recording the selected first set of medical image data on the portable digital medium, with a viewing program for viewing the medical image data stored on the portable digital recording medium. It also discloses the method and system of retrieving medical image data that are related to the received/selected original medical image data, and recording the original and related medical image data on a portable digital recording medium.





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1  
**EX PARTE**  
**REEXAMINATION CERTIFICATE**  
**ISSUED UNDER 35 U.S.C. 307**

THE PATENT IS HEREBY AMENDED AS  
INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in *italics* indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims 9, 15, 16 and 21 are determined to be patentable as amended.

Claims 10-14, 17-20 and 22, dependent on an amended claim, are determined to be patentable.

Claims 1-8 and 23-27 were not reexamined.

9. A system comprising:

a medical image server configured to receive medical image data that is generated by a plurality of imaging modalities, the medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;

a database configured to store medical image data generated by the plurality of imaging modalities;

a plurality of browsing terminals configured to receive a user selection that defines selected medical image data;

a search module configured to search the database for related medical image data that is related to the selected medical image data; and

a production station that is configured to record all of the following onto a *single, portable* data storage medium: the selected medical image data, recorded in the standard medical imaging format,

the related medical image data, recorded in the standard medical imaging format, and

a viewing program that is configured to allow viewing of the selected and the related medical image data that is recorded onto the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images.

15. [The system of claim 9,] *A system comprising:*

*a medical image server configured to receive medical image data that is generated by a plurality of imaging modalities, the medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;*

*a database configured to store medical image data generated by the plurality of imaging modalities;*

*a plurality of browsing terminals configured to receive a user selection that defines selected medical image data;*

*a search module configured to search the database for related medical image data that is related to the selected medical image data; and*

*a production station that is configured to record all of the following onto a data storage medium, wherein the data storage medium is an optical disk[.]:*

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*the selected medical image data, recorded in the standard medical imaging format,*

*the related medical image data, recorded in the standard medical imaging format, and*

*a viewing program that is configured to allow viewing of the selected and the related medical image data that is recorded onto the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images.*

16. A method for selecting and automatically recording medical image data onto a data storage medium, the method comprising:

receiving medical image data from a plurality of imaging modalities, the received medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;

storing the received medical image data in a database;

providing a user interface configured to receive a user selection that defines selected medical image data;

searching the database for related medical image data that is related to the selected medical image data;

recording the selected medical image data and the related medical image data onto a *single, portable* data storage medium using a production station, the selected medical image data being recorded on the data storage medium in the standard medical imaging format;

recording a viewing program onto the data storage medium using the production station, the viewing program being configured to allow viewing of medical image data stored on the data storage medium on widely accessible computers not specifically configured with standard medical imaging software for viewing of medical images;

printing a label using the production station, wherein the label includes identifying information associated with the selected medical image data; and

affixing the label to the data storage medium using the production station.

21. [The method of claim 16,] *A method for selecting and automatically recording medical image data onto a data storage medium, the method comprising:*

*receiving medical image data from a plurality of imaging modalities, the received medical image data being formatted in a standard medical imaging format used by specialized computers configured for viewing medical images;*

*storing the received medical image data in a database;*

*providing a user interface configured to receive a user selection that defines selected medical image data;*

*searching the database for related medical image data that is related to the selected medical image data;*

*recording the selected medical image data and the related medical image data onto a data storage medium using a production station, wherein the data storage medium is an optical disk[.], the selected medical image data being recorded on the data storage medium in the standard medical imaging format;*

*recording a viewing program onto the data storage medium using the production station, the viewing program being configured to allow viewing of medical image data stored on the data storage medium on widely accessible computers not specifically configured*



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*with standard medical imaging software for viewing of  
medical images;  
printing a label using the production station, wherein the  
label includes identifying information associated with  
the selected medical image data; and*

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*affixing the label to the data storage medium using the  
production station.*

\* \* \* \* \*






**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

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(12) **United States Patent**  
**Wright et al.**

(10) **Patent No.:** **US 7,729,597 B2**  
(45) **Date of Patent:** **\*Jun. 1, 2010**

(54) **SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA**

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(75) Inventors: **Ken Wright**, Chino Hills, CA (US);  
**Chet LaGuardia**, Rancho Santa Margarita, CA (US)

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(73) Assignee: **Datacard Systems, Inc.**, Irvine, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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This patent is subject to a terminal disclaimer.

*Primary Examiner*—Huy T Nguyen

(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear LLP

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(51) **Int. Cl.**  
**H04N 5/91** (2006.01)

(52) **U.S. Cl.** ..... **386/125; 386/126; 705/2; 705/3**

(58) **Field of Classification Search** ..... **386/95, 386/125, 126; 705/2, 3, 5**  
See application file for complete search history.

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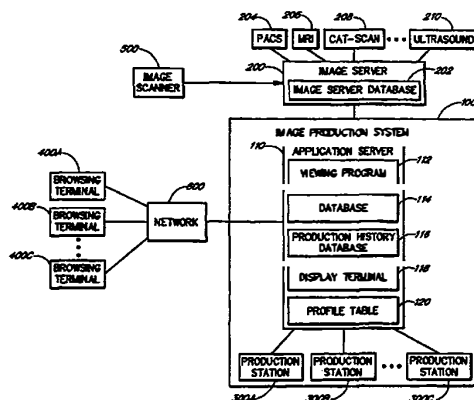
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(57) **ABSTRACT**

This application discloses a system for recording medical image data for production on a portable digital recording medium such as CDs and DVDs. This system includes a receiving module, a processing module and an output module, with viewing program for viewing medical image data stored on the portable digital recording medium. It also discloses a method of storing medical image data on a portable digital recording medium, including the steps of receiving the medical image data, processing the data and storing the data on the portable digital recording medium, with a viewing program for viewing medical image data stored on the portable digital recording medium. It further discloses a method of selecting medical image data for recording on a portable digital recording medium, including the steps of connecting a browsing terminal to a computer database that stores the medical image data, selecting a first set of the medical image data from the computer database, and recording the selected first set of medical image data on the portable digital medium, with a viewing program for viewing the medical image data stored on the portable digital recording medium. It also discloses the method and system of retrieving medical image data that are related to the received/selected original medical image data, and recording the original and related medical image data on a portable digital recording medium.

**10 Claims, 5 Drawing Sheets**





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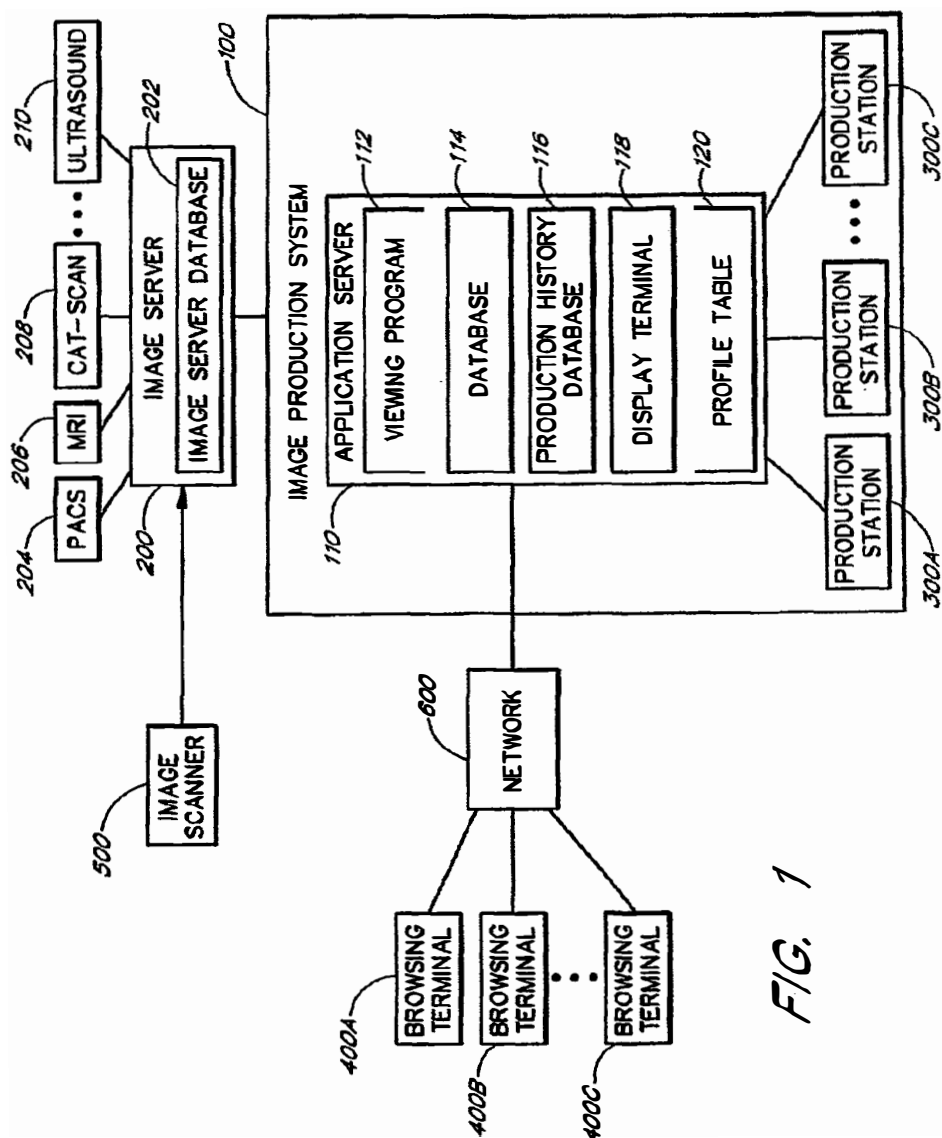


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IMAGE INPUT DEVICES	250		252		254	
	FIELDS	AUTO-PRODUCE 1	TARGET PRODUCTION STATION	RELATED DATA STORAGE		
MRI MACHINE I		YES	PRODUCTION STATION A	PACS 1		
MRI MACHINE II		NO				
ULTRASOUND MACHINE I		YES	PRODUCTION STATION B	PACS 1, PACS 2		

FIG. 2



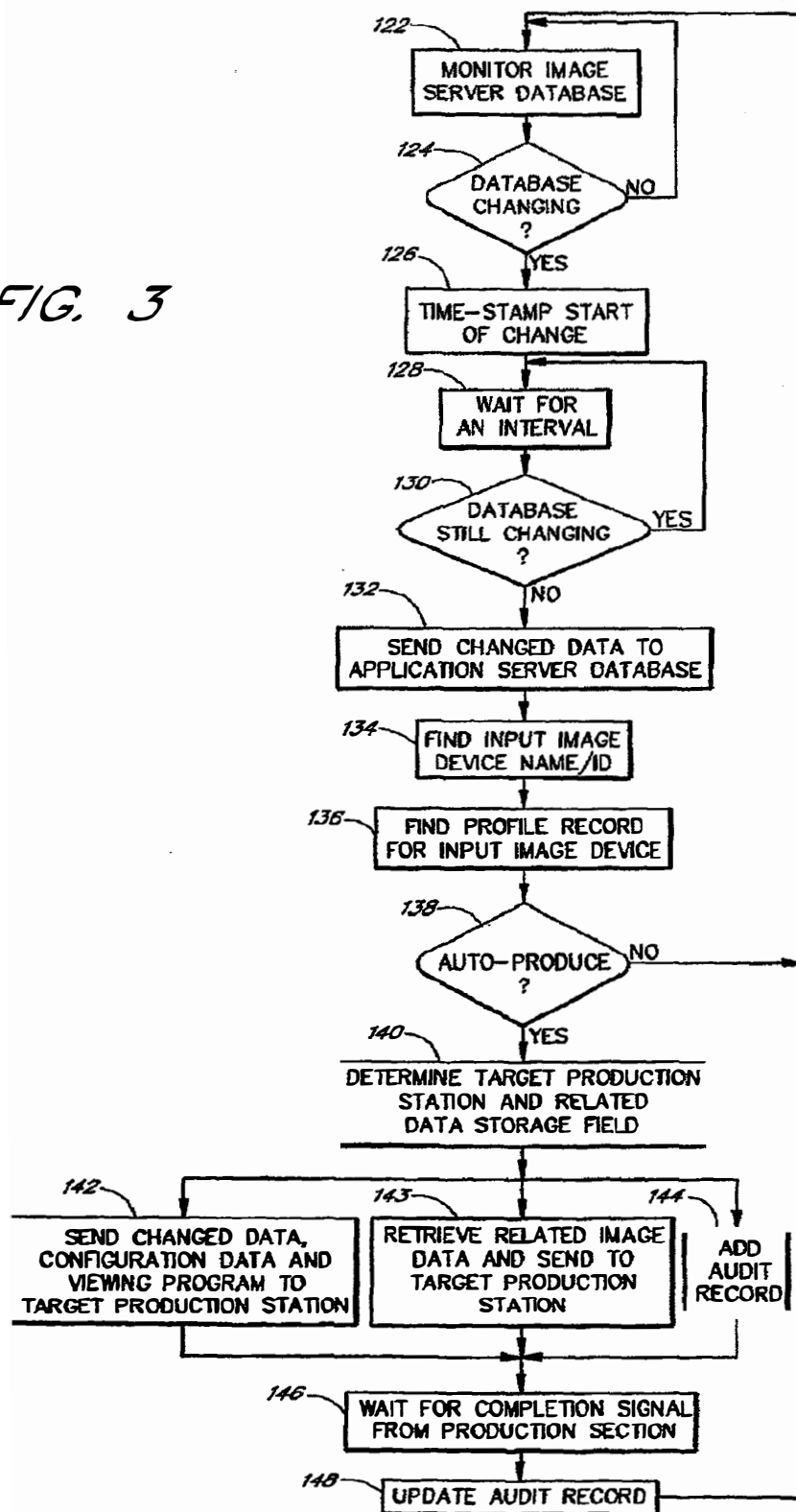
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FIG. 3





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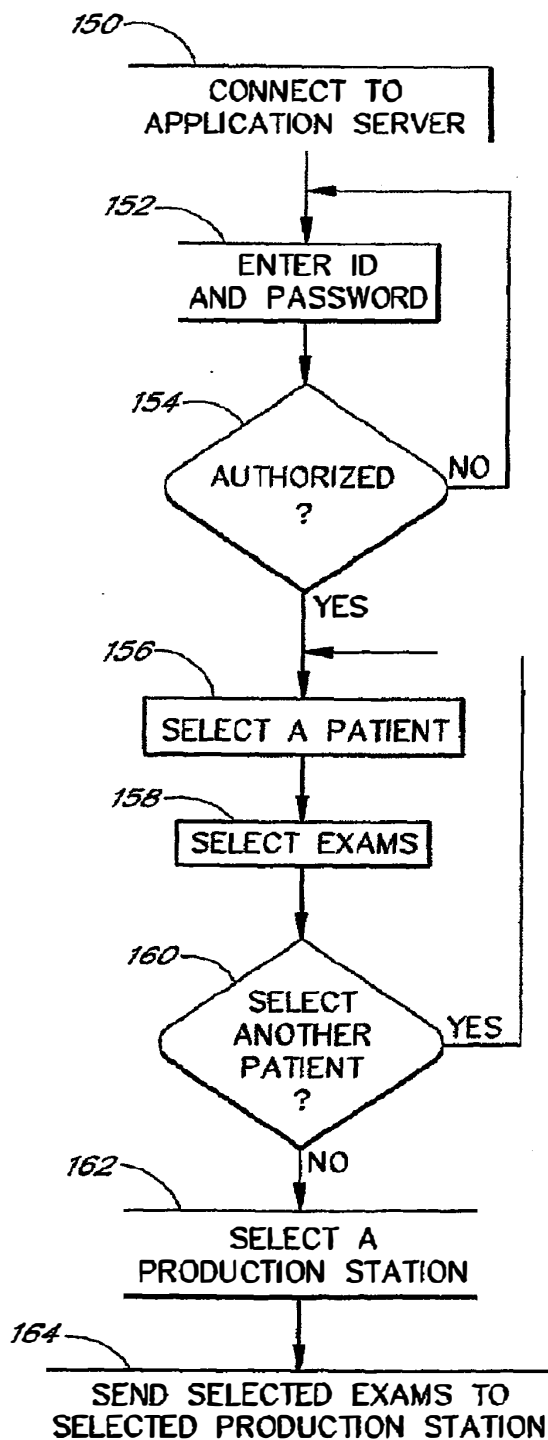


FIG. 4



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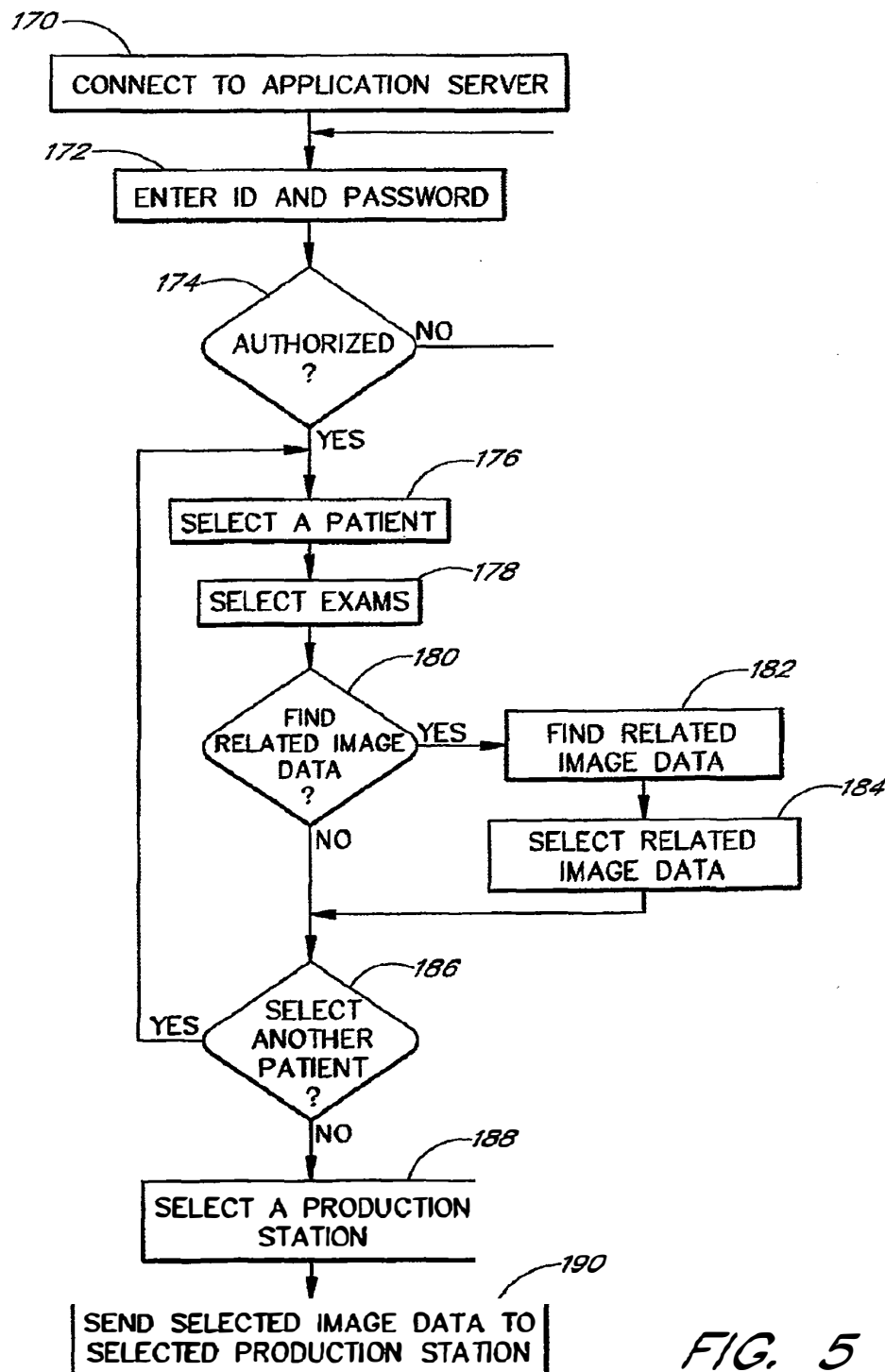


FIG. 5



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# SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 11/942,630, filed on Nov. 19, 2007, which is a continuation of U.S. patent application Ser. No. 09/761,795, filed on Jan. 17, 2001, now U.S. Pat. No. 7,302,164, issued Nov. 27, 2007, and claims priority to U.S. Provisional Patent Application 60/181,985, filed on Feb. 11, 2000. The entire disclosure of these priority applications are hereby incorporated by reference herein in their entirety.

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

This invention relates to a system and method for the production of medical image data on portable digital recording media such as compact discs. More particularly, it relates to a system and method for receiving medical image data, processing medical image data, and transmitting medical image data to be recorded on a portable digital recording medium.

### 2. Description of the Related Art

Since the invention of the x-ray film, film has been the predominant multipurpose medium for the acquisition, storage, and distribution of medical images. However, the storage and distribution of film often requires considerable expenses in labor and storage space.

Today's modern hospitals utilize computer-aided imaging devices such as Computed Tomography (CT), Digital Subtracted Angiography, and Magnetic Resonance Imaging (MRI). These digital devices can generate hundreds of images in a matter of seconds. Many hospitals require these images to be printed on film for storage and distribution. To print complete sets of medical images from these digital devices, the cost in film material, storage space, and management efforts is often very high.

Some radiology departments have installed digital image storage and management systems known as PACS (Picture Archive Communication Systems). PACS are capable of storing a large amount of medical image data in digital form. PACS are made by manufacturers including GE, Siemens, and Fuji.

To ease the communication of data, the DICOM (Digital Imaging and Communications in Medicine) standard was developed by ACR-NEMA (American College of Radiology-National Electrical Manufacturer's Association) for communication between medical imaging devices and PACS. In addition to the examined images, patient demographics, and exam information such as patient name, patient age, exam number, exam modality, exam machine name, and exam date can also be stored and retrieved in DICOM compatible data format. A DICOM file stores patient and exam information in the header of the file, followed by the exam images. PACS store medical image data in DICOM format.

Digital medical image data can be stored on PACS and distributed using the Internet. However, many physicians' offices do not have the bandwidth suitable for fast download

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of medical image data. The concerns for medical data privacy and Internet security further reduce the desirability of Internet distribution.

## SUMMARY OF THE INVENTION

The claimed system allows for digital medical image data to be produced on a portable digital recording medium such as a CD. A CD containing the medical image data can be distributed to physicians, hospitals, patients, insurance companies, etc. One embodiment of the claimed system allows for medical image data to be placed on a CD along with a viewing program, so that a user can use any computer compatible with the CD to view the medical image data on the CD. One embodiment of the claimed system allows for searching medical exam data that are related and placing such data on the same CD.

One embodiment of the claimed system comprises a receiving module configured to receive medical image data, a processing module configured to process the received medical image data, and an output module configured to transmit the processed medical image data to a production station configured to produce the transmitted medical image data on portable digital recording medium, such as a CD. In one embodiment, the output module transmits a viewing program configured to view medical image data to the production station so that the viewing program is produced on the same CD as the medical image data. In another embodiment, the CD already contains the viewing program before the medical image data is transmitted to the CD production station.

In one embodiment of the claimed system, the processing module is configured to create and store audit information of the portable digital recording medium produced by the production station.

In another embodiment of the claimed system, the processing module is configured to identify the originating image input device of the received medical image data, and determine, on the basis of the originating image input device, whether to transmit the received medical image data to a production station. The processing module also selects, on the basis of the originating image input device, one of multiple production stations as the target production station.

Yet another embodiment of the claimed system is configured to retrieve medical image data that are related to the received medical image data, and transmit the retrieved related image data to the production station. In one embodiment, exam images of the same patient are considered related. In another embodiment, exam images of the same patient and the same modality are considered related. For example, two x-ray exams on the left hand of the same patient are considered related. In yet another embodiment, exam images of the same patient, the same modality and taken within a specified date range are considered related. For example, two x-ray exams on the left hand of the same patient taken within a two-month period are considered related. A hospital may also determine other scenarios of relatedness.

One claimed method comprises the steps of connecting a browsing terminal to a computer database configured to store medical image data, selecting medical image data from medical image data stored on the database, and recording the selected medical image data on portable digital recording medium. In one embodiment, the claimed method also comprises a step of recording a viewing program configured to view medical image data on the portable digital recording medium.

One embodiment of the claimed method further comprises the steps of finding and retrieving medical image data that are



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related to the selected medical image data, and recording related image data to portable digital recording medium.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates one embodiment of an image production system comprising an application server and portable digital recording medium production stations.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table.

FIG. 3 illustrates a process of receiving image data from image server, processing received image data, and transmitting such data to the production station. This process also retrieves and transmits related image data for production.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server, with the option of selecting and ordering the production of related image data.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates one embodiment of an image production system 100 comprising an application server 110 and one or more portable digital recording medium production stations 300A, 300B and 300C. In the preferred embodiment, the production stations 300A, 300B and 300C are CD (Compact Disc) production stations. Digital portable recording medium comprises CDs and DVDs (Digital Versatile Disc or Digital Video Disc). CDs may comprise CD-ROM (Compact Disc Read Only Memory), CD-R (Compact Disc Recordable), and CD-RW (Compact Disc Recordable and Writable). DVDs may comprise DVD-ROM (DVD Read Only Memory), DVD-R (DVD Recordable) and DVD-RAM (a standard for DVDs that can be read and written many times). Thus, although the following description refers primarily to CDs, those of ordinary skill in the art will understand that any suitable portable digital recording medium can be substituted for CDs.

The application server 110 is connected to one or more physician browsing terminals 400A, 400B and 400C through a computer network 600. Each physician browsing terminal 400A, 400B or 400C comprises a browsing program such as Internet Explorer or Netscape Communicator. Physicians or their assistants launch the browsing program to access the application server 110 through the network 600 in order to select medical image data stored on the application server database 114 to be produced by a production station 300A, 300B or 300C. In the preferred embodiment, the physician browsing terminals 400A, 400B and 400C are connected to the application server through an Intranet. One embodiment of the Intranet utilizes TCP/IP network protocol. The Intranet can connect one radiology department, multiple departments within a hospital, or multiple hospitals. In another embodiment the browsing terminals 400A, 400B and 400C are connected to the application server 110 through the Internet.

Still referring to FIG. 1, the application server 110 is also connected to an image server 200. The image server 200 is further connected to image input devices such as PACS 204, MRI machines 206, CT-scan machines 208, ultrasound machines 210, etc. In the preferred embodiment, the image server 200 is a DICOM image server configured to receive and store medical image data in DICOM format. In operation, the image server 200 receives medical image data from image input devices such as PACS 204, MRI machines 206, CT-scan

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machines 208 and ultrasound machines 210 and stores such image data in the image server database 202. A high-resolution image scanner 500 is also connected to the image server 200, so that medical image data stored on film can be scanned on the image scanner 500, transmitted to the image server 200 and stored in the image server database 202. In one embodiment, the image scanner 500 also converts the scanned image to DICOM format. The application server 110 receives input image data from the image server database 202, processes the received image data, and sends the image data to one of the production stations 300A, 300B or 300C to produce CDs.

The application server 110 comprises a viewing program 112, an application server database 114 that stores image data received from the image server 200, a production history database 116 that stores audit records on each CD produced, a display terminal 118 for programming and operating the application server 110 by a programmer or physician, and an image input device profile table 120.

Still referring to FIG. 1, the viewing program 112 is configured to allow users to read and manipulate medical image data. The viewing program 112 comprises multiple image manipulation functions, such as rotating images, zooming in and zooming out, measuring the distance between two points, etc. The viewing program 112 also allows users to read the patient demographics and exam information associated with the image data. The viewing program 112 used in the preferred embodiment is produced by eFilm Medical Inc. located in Toronto, Canada. The viewing program 112 used in the preferred embodiment is an abbreviated version with fewer functions and takes less storage space, in order to maximize the storage space for image data on a CD. The image server 200 used in the preferred embodiment is also made by eFilm Medical Inc.

The CD production stations 300A, 300B and 300C in the preferred embodiment are produced by Rimage Corporation in Edina, Minn. Details about the Rimage CD production stations can be found in U.S. Pat. Nos. 5,542,768, 5,734,629, 5,914,918, 5,946,276, and 6,041,703, which are incorporated herein by reference in their entirety.

The application server **110** in the preferred embodiment runs on a personal computer running a 400 MHz Celeron or Pentium II/III chip, with Windows 98 or NT as the operating system.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table 120. The image input device profile table 120 contains a profile record for each image input device. Each image input device's profile record comprises: (1) an "auto-produce" logical field 250 indicating whether medical image data from this image input device should be produced on CD automatically by the image production system 100, (2) a "target production station" field 252 identifying one of the production stations 300A, 300B or 300C on which medical image data is to be produced, and (3) a "related data storage" 254 field identifying the medical image data storage units in which to search for the related image data. A medical image data storage unit is a storage unit that stores medical image data and is connected to the application server 110. In one embodiment, a medical image data storage unit is connected to the application server 110 through the image server 200. In the preferred embodiment, PACS 204 is such a medical image data storage unit.

In FIG. 2, the sample profile table 120 contains profile records for MRI Machine I, MRI Machine II, and Ultrasound Machine I. For MRI Machine I, the “auto-produce” field 250 contains a “yes” value, directing the image production system 100 to automatically produce image data originating from MRI Machine I on portable digital recording medium. Its



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"target production station" field 252 contains a "Production Station A" value, directing the image production system 100 to produce image data originating from MRI Machine I on production station A. Its "related data storage" field 254 is "PACS I", directing the image production system 100 to retrieve related medical image data from PACS I. For MRI Machine II, the "auto-produce" field 250 is "no", directing the image production system 100 to not automatically produce image data originating from MRI Machine II on portable digital recording medium. Since image data from MRI Machine II will not be automatically produced, the "target production station" field 252 and the "related data storage" field 254 are irrelevant. For Ultrasound Machine I, the "auto-produce" field 250 is "yes", and its "target production" field 252 is "Production Station B". Its "related data storage" field 254 contains a value of "PACS I, PACS II", directing the image production system 100 to search PACS I and PACS II for related medical image data.

FIG. 3 illustrates a process of the application server 110 receiving image data from the image server 200, processing the received image data, and transmitting such data to the production station 300A, 300B or 300C. The application server 110 continuously monitors the image server database 202 in step 122. In one embodiment, the application server continuously "pings" the network address corresponding to the image server 200 on the network that connects the application server 110 with the image server 200.

Still referring to FIG. 3, the application server 110 determines if the image server database 202 is changing, in step 124. In the preferred embodiment, the application server 110 makes that determination by detecting whether the image server database 202 is increasing in size. If there is no change in the image server database 202, then the application server 110 returns to step 122 to continue monitoring. If there is change in the image server database 202, then the application server 110 proceeds to step 126 and time-stamps the moment that the change started. The application server 110 then proceeds to step 128 and waits for an interval, typically 35 to 65 seconds. After the interval, the application server 110 checks whether the image server database 202 is still changing, in step 130. If the image server database 202 is still changing then the application server 110 returns to step 128 to wait for another interval. If the image server database 202 is no longer changing, then the application server 110 proceeds to step 132 and copies the data changed since the time-stamped moment. This changed data is copied from the image server database 202 to the application server database 114.

The application server 110 proceeds to step 134 and finds the input image device name or identification number from the newly received image data. In the preferred embodiment, image data from the image server database 202 are stored in DICOM format, and the input image device name or identification number is stored in the header of the DICOM format image data file. The input image device name/ID indicates the origin of the newly received data. The application server 110 proceeds to step 136 and uses the found input image device name/ID to find a corresponding profile record in the image input device profile table 120. If the profile record has an "auto-produce" field 250 with a "no" value, the application server 110 returns from step 138 to step 122 to continue monitoring the image server database 202. If the "auto-produce" field 250 contains a "yes" value, the application server 110 proceeds from step 138 to step 140, and determines the target production station 300A, 300B or 300C from the "target production station" field 252 of the profile record. In step 140, the application server 110 also determines the value in the "related data storage" field 254 of the profile record.

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Still referring to FIG. 3, in step 142, the application server 110 sends a copy of the newly received data, along with a copy of the viewing program 112, to the target production station 300A, 300B or 300C identified in step 140. With the viewing program attached, the image data on each CD produced by the target production station 300A, 300B or 300C can be viewed on any computer that accepts the CD, regardless of whether that computer has its own viewing program installed. In one embodiment, the data received in step 132 is stored in the application server database 114 before it is transmitted to the target production station 300A, 300B or 300C in step 142. In another embodiment, the application server 110 transmits the data received in step 132 to the target production station 300A, 300B or 300C, without storing a copy of the data in the application server database 114.

In one embodiment, the application server 110 does not send a copy of the viewing program 112 to the target production station during step 142. Rather, the application server 110 sends a copy of the received medical image data to the production station 300A, 300B or 300C to be recorded on pre-burned CDs. Each pre-burned CD contains a viewing program already recorded onto the CD before step 142.

In step 142, the application server 110 also sends configuration data to the target production station 300A, 300B or 300C. The configuration data comprises a label-printing file comprising the specification for printing labels on top of the CDs, and a "number of copies" value indicating the number of copies of CDs to be produced. A typical specification in the label-printing file may specify information such as patient name, exam modality, hospital name, physician name, production date, etc. to be printed by the target production station as a label on the top of each CD produced.

Still referring to FIG. 3, in step 143, the application server 110 searches the application server database 114 for image data related to the newly received data. The application server 110 then searches the PACS systems identified in the "related data storage" field 254 in step 140 for data related to the newly received data. Some PACS systems each comprise a primary image data storage and an archive image data storage, and the application server 110 searches both the primary image data storage and the archive image data storage on these PACS systems. The application server 110 is connected to the PACS systems through the image server 200. The application server 110 retrieves found related data from the PACS systems and stores a copy of such found related data in the application server database 114. The application server 110 sends a copy of related data that are found from the application server database 114 or the PACS systems to the target production station 300A, 300B or 300C. The medical image data originally received in step 132 and the related medical image data are produced by the target production station 300A, 300B or 300C on the same CDs for comparative study.

For each CD to be produced, the application server 110 adds one audit record to the production history database 116 in step 144. The new audit record comprises the identification number of the CD and other relevant information about the CD, such as the physician who requested the production (if any), and the names of the patients whose exam images are on that CD.

Steps 142, 143 and 144 may be executed immediately before, concurrent with, or immediately after one another.

The target production station 300A, 300B or 300C produces the CDs containing the medical image data and the viewing program sent to it, and prints a label on top of every CD, corresponding to the specification in the label-printing file. The number of CDs produced corresponds to the "number of copies" number sent by the application server 110 in



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step 142. When the target production station has produced the CDs, the production station returns a “completed” signal to the application server 110. The application server 110 waits for this signal in step 146.

Still referring to FIG. 3, in step 148, the application server 110 updates the audit records in the production history database 116 that were created in step 144. For each CD produced, the application 110 server updates the date and time of production for that CD's audit record. The application server 110 also updates the status value for that CD's audit storage record from "processing" to "successful". The application server 110 then continues monitoring the image server database 202 as in step 122.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110. A user, typically a physician or physician's assistant, accesses the application server database 114 from a browsing terminal 400A, 400B or 400C connected to a network 600. In one embodiment, the user launches a browser such as Microsoft Internet Explorer or Netscape Communicator, and specifies a network address corresponding to the application server 110, in step 150. In another embodiment, the user clicks a pre-defined icon that directly launches a browser connecting to the application server 110. The application server 110 prompts the user to enter a password or an identification name coupled with a password, in step 152. The application server 110 checks if the entered identification/password is authorized in step 154. If the entered identification/password is not authorized the user is returned to step 152 to re-enter the identification/password, or disconnected from the application server 110. If the entered identification/password is authorized then the user is allowed access to the application server database 114 and the application server 110 proceeds to step 156.

Still referring to FIG. 4, in **step 156** the user is prompted to select a patient from a list of patients with exam images in the application server database 114. The user is then shown a list of the selected patient's exams, and is prompted to select one or more exams of that patient, in **step 158**. When the user indicates that he/she has completed selecting all exams for that patient, the user is asked in **step 160** whether to select another patient from the list of patients. If the user answers "yes", the user is returned to **step 156** to select another patient. If the user answers "no", the user proceeds to **step 162**.

In another embodiment, when a user selects a patient, all exams belonging to that patient will be automatically selected without prompting for user selection. In yet another embodiment, the user is not prompted to select patients, but is only prompted to select exams from a list of all exams for all patients contained in the application server database 114.

When the user indicates that he/she has completed selecting, the user is prompted to select a production station from a list of production stations 300A, 300B and 300C in step 162. The user is also prompted to enter additional label text to be printed as labels on the CDs to be produced, to supplement the text printed according to the specification of the label-printing file. The user can advantageously select the production station located closest to his/her office. In one embodiment, only one production station is connected to the application server 110, and the lone production station will be the selected production station without prompting for user selection.

In one embodiment, the user is also prompted to select the number of copies of CDs to be produced. In another embodiment, the number of copies is set at one without prompting for user direction. As described above in connection with FIG. 3, in step 164, the application server 110 sends a copy of the

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image data of the selected exams for the selected patients to the selected production station, along with a copy of the viewing program 112, and configuration data comprising a label-printing file, additional label text, and a number indicating the number of copies of CDs to be produced. The production station 300A, 300B or 300C then produces one or more CDs containing the selected exams for the selected patients and the viewing program, with labels printed on top of the CDs according to the specification in the label-printing file and the user-entered additional label text.

In another embodiment, a user accesses the application server database 114 not from a browsing terminal 400A, 400B or 400C, but directly from the display terminal 118. In this embodiment the user directly proceeds from step 152. In this embodiment the user is typically a programmer or operator of the image production system 100.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110, with the additional option of selecting and ordering the production of related data for comparative study. As described above in connection with FIG. 4, a user connects to the application server 110 from a browsing terminal 400A, 400B or 400C in step 170. The user enters identification information and a password in step 172. Step 174 determines whether the user is authorized to access the application server database 114. If authorized, the user is prompted to select a patient in step 176, and selects exams of the selected patient in step 178. The user is then asked in step 180 if he/she desires to find related data of that patient for comparative study.

If the user answers yes, the application server 110 then searches for related data. The application server 110 finds the image input device profile table 120 profile record corresponding to the image input device from which the selected data originates, identifies the list of PACS systems stored in the "related data storage" field 254, and searches these PACS systems for related data. In another embodiment, once the user has selected a patient/exam combination, the application server 110 automatically searches for related data without asking for user direction. In this embodiment, the application server 110 alerts the user if related data are found. In one embodiment, the application server 110 also searches the application server database 114 for related medial image data.

Still referring to FIG. 5, the user is then prompted to select all or some of the related data from the list of found related data for production, in step 184. In another embodiment, all found related data are automatically selected by the application server 110 for production, without prompting for user selection.

The user is then prompted to select another patient in step 186. After the user has completed selecting all patients, the user is prompted to select a CD production station 300A, 300B or 300C in step 188. The user is also prompted to enter additional label text. In step 190, the application server 110 then sends a copy of the original and selected related data, along with a copy of the viewing program 112, a number indicating the number of copies to be produced, additional label text, and a label-printing file to the selected production station 300A, 300B or 300C for production.

The above paragraphs describe the application server **110** with one database **114** for image data storage. In another embodiment, the application server **110** includes two databases for image data storage: a new data database and a storage data database. The new data database stores only the most recent batch of new data just received from the image server **200**. After the data in the new data database is sent to a production station **300A**, **300B** or **300C**, the application server **110** erases data in the new data database. The storage



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data database stores all data that has ever been received from the image server database 202. In the processes described by FIG. 4 and FIG. 5, a user selects images for production from the storage data database.

Several modules are described in the specification and the claims. The modules may advantageously be configured to reside on an addressable storage medium and configured to execute on one or more processors. The modules may include, but are not limited to, software or hardware components that perform certain tasks. Thus, a module may include, for example, object-oriented software components, class components, processes methods, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables. Modules may be integrated into a smaller number of modules. One module may also be separated into multiple modules.

Although the foregoing has been a description and illustration of specific embodiments of the invention, various modifications and changes can be made thereto by persons skilled in the art, without departing from the scope and spirit of the invention as defined by the following claims.

What is claimed is:

1. A computer-implemented method for automatically generating a portable computer-readable medium containing medical data related to a patient, comprising:
  - receiving, via computer-implemented interface a request for medical data related to the patient;
  - automatically searching a first computer database via a first database interface for a first set of medical imaging data related to the patient based on the received request;
  - automatically retrieving the first set of medical imaging data related to the patient;
  - automatically searching, based on the received request, a second computer database via a second database interface for additional medical data also related to the patient, wherein the second interface is different from the first interface;
  - automatically receiving the additional related medical data; and
  - automatically generating a portable computer-readable medium, at a production station, containing the first set of medical imaging data related to the patient and the additional related medical data, wherein the first set of medical imaging data is formatted in a standard medical imaging format used by a computer configured for viewing the medical imaging data.
2. The method of claim 1, wherein the second computer database is remote from the first computer database and searching the second computer database via the second interface comprises sending a search request to a remote server coupled to the second computer database.
3. The method of claim 1, wherein searching for additional medical data related to the patient comprises:
  - automatically checking an electronic profile table to determine that the second computer database has related medical data; and
  - searching the second computer database via the second interface for the additional related medical data.
4. The method of claim 1, wherein searching for additional medical data related to the patient comprises:
  - automatically checking an electronic profile table to determine that the second computer database has medical data that is also related to the patient; and
  - searching the second computer database via the second interface using a unique identifier associated with the patient.

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5. The method of claim 1, wherein searching the second computer database comprises determining metadata related to the first set of medical imaging data; and searching the second computer database comprises searching the second computer database via the second interface using the metadata.

6. A system for automatically generating a portable computer-readable medium containing medical data related to a patient, comprising:

- a first database configured to store medical data related to the patient;
- a second database configured to store medical data related to the patient, the second database being distinct from the first database;
- a computer-implemented interface configured to receive a request for medical data related to the patient;
- an application server coupled to the first database and the second database, said application server being configured to:
  - send a search request, based on the received request, via a first interface to the first computer database for a first set of medical imaging data related to the patient;
  - receive from the first database the first set of medical imaging data related to the patient;
  - send a search request, based on the received request, via a second interface to the second computer database for additional medical data also related to the patient, wherein the second interface is different from the first interface; and
  - receive from the second database the additional related medical data; and
- a production station configured to
  - generate a portable computer-readable medium containing the first set of medical imaging data related to the patient and the additional related medical data, wherein the medical imaging data is formatted in a standard medical imaging format used by a computer configured for viewing the medical imaging data.

7. The system of claim 6, wherein the second computer database is remote from the first computer database and searching the second computer database via the second interface comprises sending a search request to a remote server coupled to the second computer database.

8. The system of claim 6, wherein the application server is further configured to:

- check an electronic profile table to determine that the second computer database has related medical data; and
- choose to send a search to the second computer database via the second interface for the additional related medical data.

9. The system of claim 6, wherein the application server is further configured to:

- check an electronic profile table to determine that the second computer database has medical data that is also related to the patient; and
- send a search request to the second computer database via the second interface using a unique identifier associated with the patient.

10. The system of claim 6, wherein the application server is further configured to: determine metadata related to the first set of medical imaging data; and wherein the search sent to the second computer database via the second interface is generated based on the metadata.

\* \* \* \* \*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,729,597 B2  
APPLICATION NO. : 12/491187  
DATED : June 1, 2010  
INVENTOR(S) : Ken Wright et al.

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page, at (Item 56), Page 5, Column 2, Line 27, Under Other Publications, change "Heath" to --Health--.

Title Page, at (Item 56), Page 5, Column 2, Line 34, Under Other Publications, change "all," to --al--.

Title Page, at (Item 56), Page 6, Column 1, Line 45, Under Other Publications, change "Doman" to --Domain--.

Title Page, at (Item 56), Page 6, Column 2, Line 27, Under Other Publications, change "Joumal" to --Journal--.

Title Page, at (Item 56), Page 7, Column 1, Line 50, Under Other Publications, change "Baffiers," to --Barriers--.

Title Page, at (Item 56), Page 10, Column 2, Line 3, Under Other Publications, change "Desecription" to --Description--.

Title Page, at (Item 56), Page 12, Column 1, Line 14, Under Other Publications, change "Summ'y," to --Summary,--.

Title Page, at (Item 56), Page 15, Column 2, Line 24, Under Other Publications, change "VEDPRO," to --VEPRO,--.

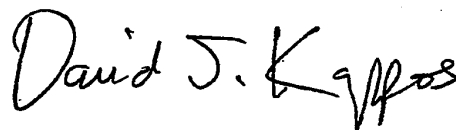
Title Page, at (Item 56), Page 15, Column 2, Line 24, Under Other Publications, change "Advertisst" to --Advertisst--.

Title Page, at (Item 56), Page 17, Column 2, Line 41, Under Other Publications, change "Mammunome" to --Mammome--.

Title Page, at (Item 56), Page 18, Column 1, Line 33, Under Other Publications, change "and Progranunen" to --und Programmen--.

Signed and Sealed this

Fourteenth Day of December, 2010



David J. Kappos  
*Director of the United States Patent and Trademark Office*



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,729,597 B2**

Page 2 of 2

Title Page, at (Item 56), Page 18, Column 1, Line 34, Under Other Publications, change  
“Archivierungs-and” to --Archivierungs und--.

At Sheet 3 of 5 (Box No. 146) (FIG. 3), Line 2, Change “SECTION” to --STATION--.

At Column 9, Line 27, In Claim 1, change “interface” to --interface,--.



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# THE UNITED STATES OF AMERICA

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**United States Patent and Trademark Office**

August 25, 2011

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM  
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U.S. PATENT: 7,783,174

ISSUE DATE: August 24, 2010

By Authority of the  
Under Secretary of Commerce for Intellectual Property  
and Director of the United States Patent and Trademark Office

N. WILLIAMS

Certifying Officer







(12) **United States Patent**  
**Wright et al.**

(10) **Patent No.:** **US 7,783,174 B2**  
(45) **Date of Patent:** **\*Aug. 24, 2010**

- (54) **SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA**

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- (75) Inventors: **Ken Wright**, Chino Hills, CA (US);  
**Chet LaGuardia**, Rancho Santa  
Margarita, CA (US)

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(Continued)

This patent is subject to a terminal disclaimer.

*Primary Examiner*—Huy T Nguyen  
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson &  
Bear LLP

- (21) Appl. No.: 12/484,100

(57) **ABSTRACT**

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- (65) **Prior Publication Data**

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### Related U.S. Application Data

- (63) Continuation of application No. 11/942,630, filed on Nov. 19, 2007, which is a continuation of application No. 09/761,795, filed on Jan. 17, 2001, now Pat. No. 7,302,164.

- (60) Provisional application No. 60/181,985, filed on Feb. 11, 2000.

- (51) **Int. Cl.**  
**H04N 5/91** (2006.01)

- (52) **U.S. Cl.** ..... **386/125; 386/126**

- (58) **Field of Classification Search** ..... 386/95,  
386/125, 126; 705/2, 3  
See application file for complete search history.

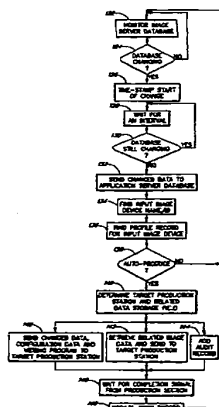
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**14 Claims, 5 Drawing Sheets**





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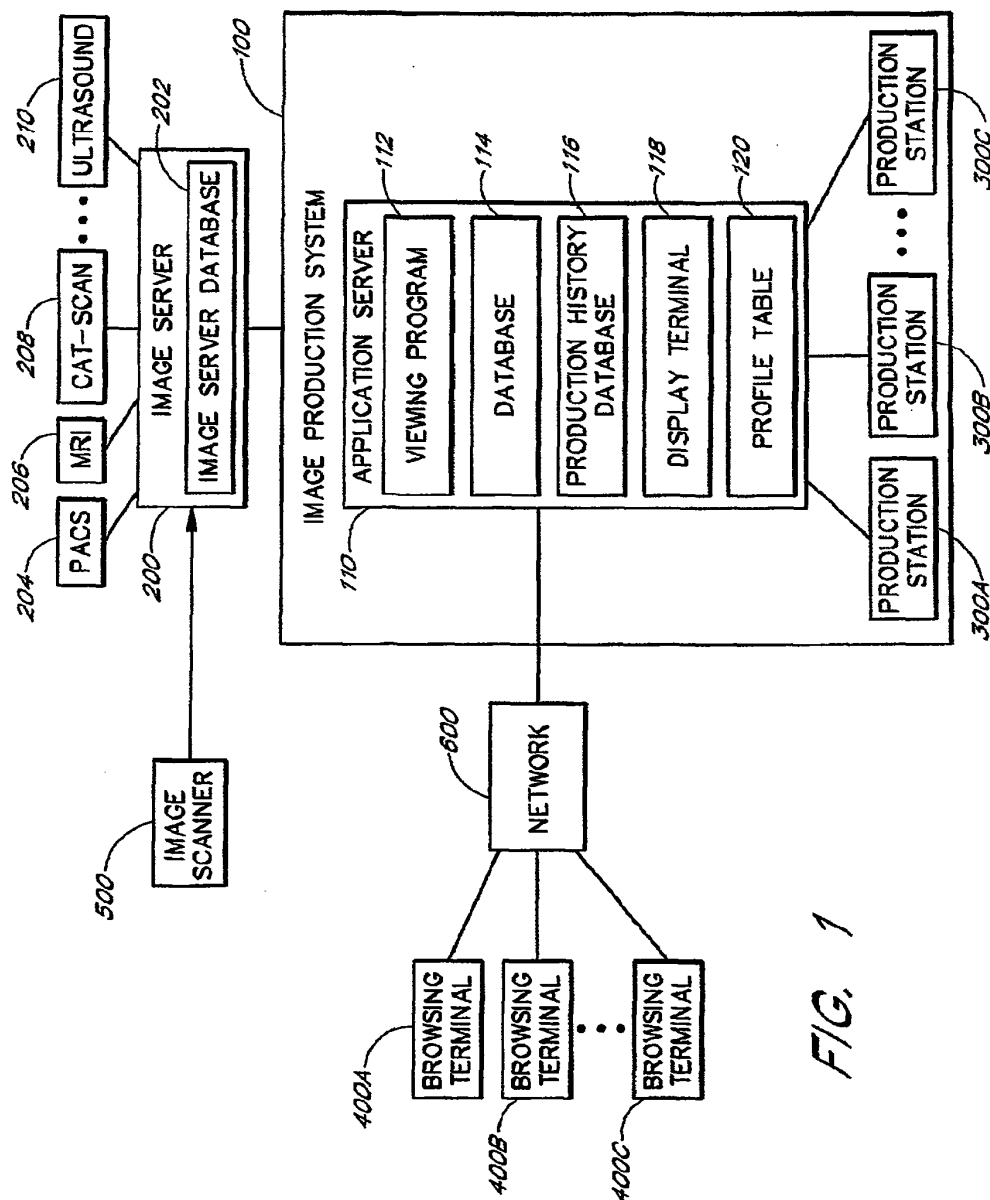


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250		252		254	
IMAGE INPUT DEVICES	FIELDS	AUTO-PRODUCE 1	TARGET PRODUCTION STATION	RELATED DATA STORAGE	
MRI MACHINE I		YES	PRODUCTION STATION A	PACS 1	
MRI MACHINE II		NO			
ULTRASOUND MACHINE I		YES	PRODUCTION STATION B	PACS 1, PACS 2	

FIG. 2



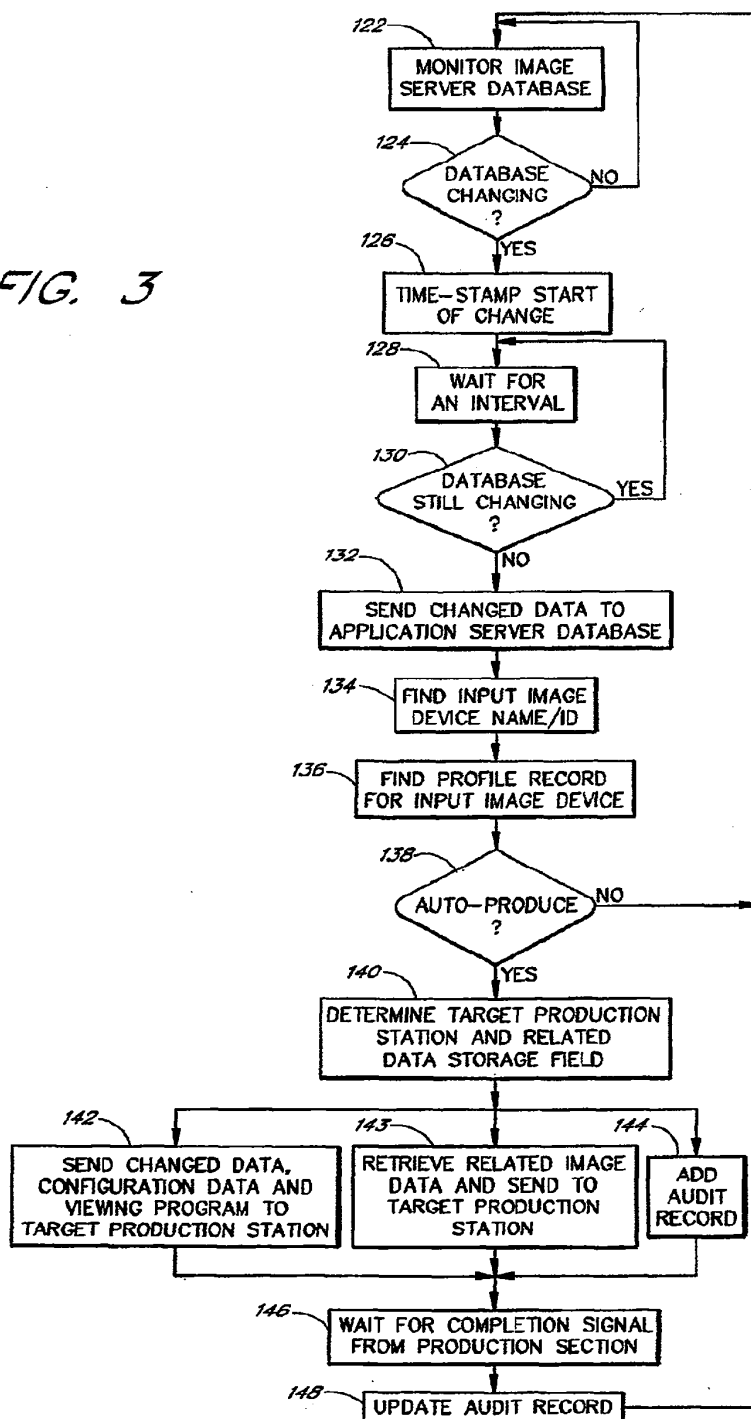
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FIG. 3





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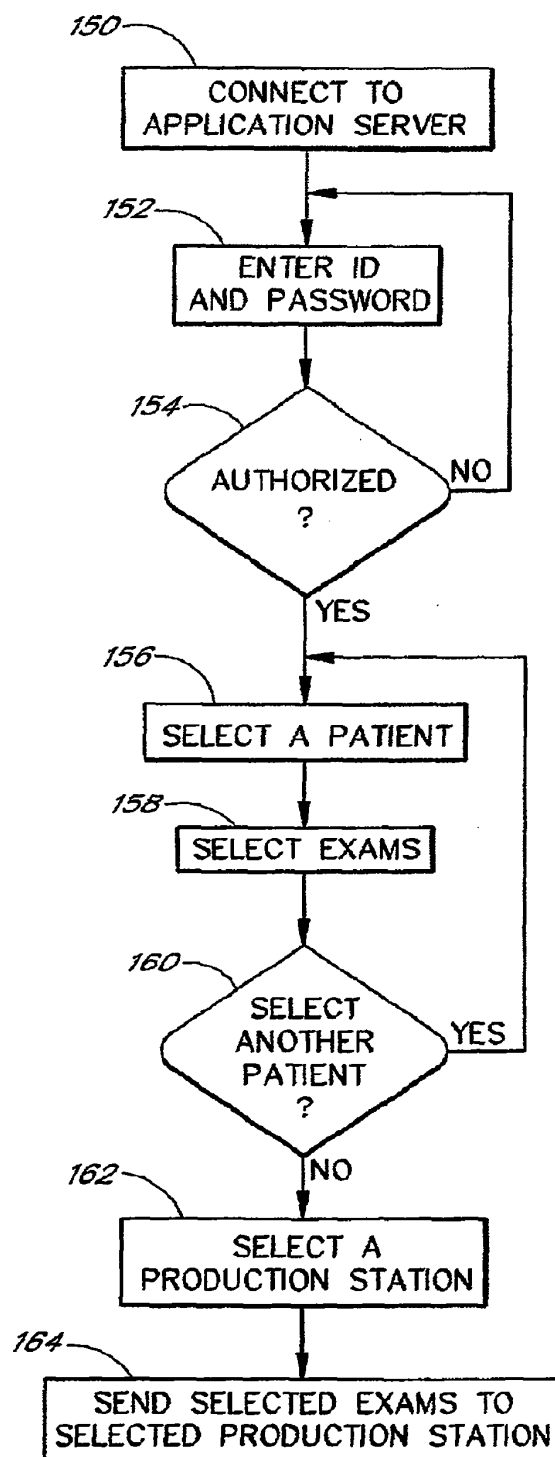


FIG. 4



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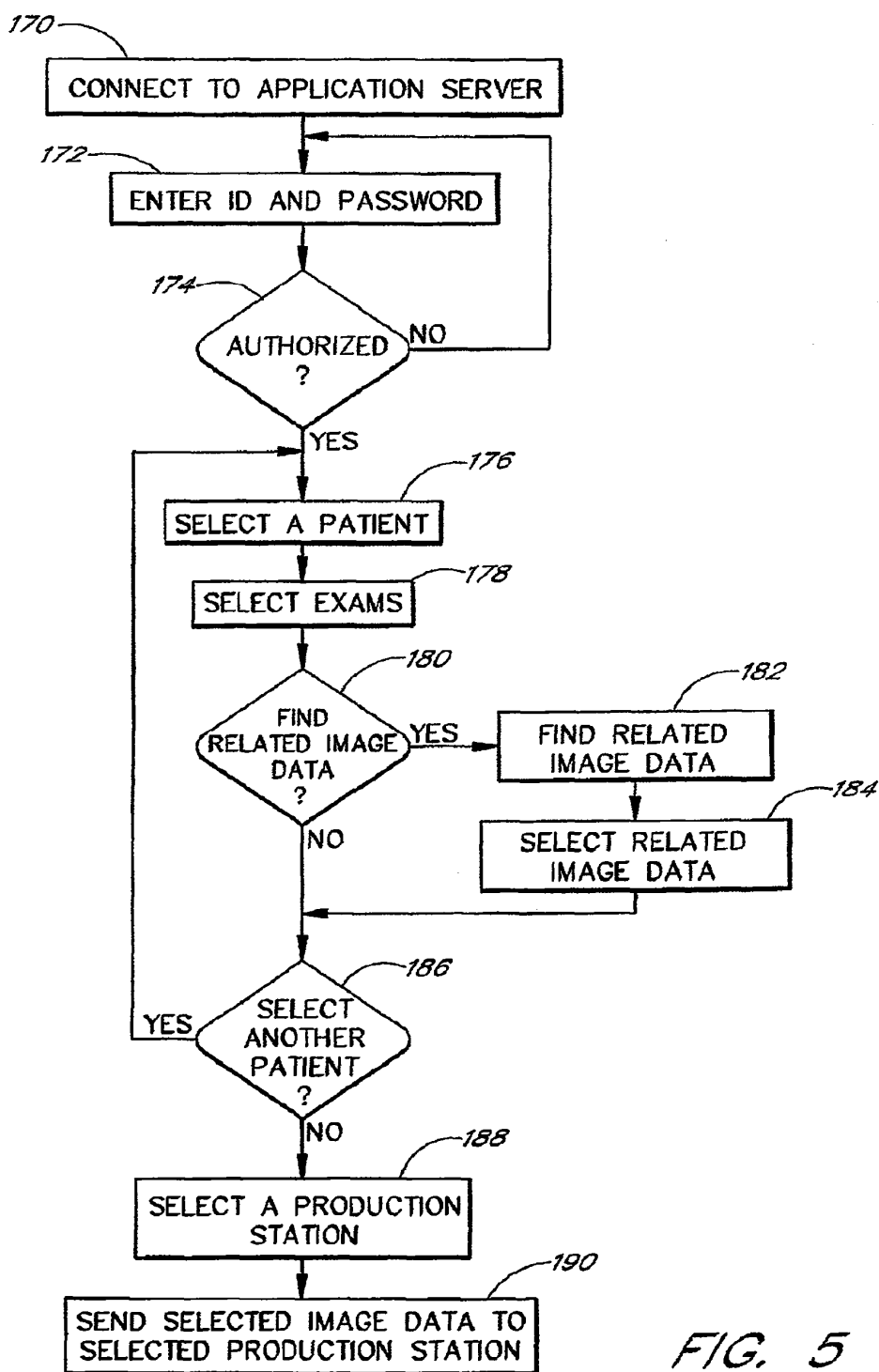


FIG. 5



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# SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 11/942,630, filed on Nov. 19, 2007, which is a continuation of U.S. patent application Ser. No. 09/761,795, filed on Jan. 17, 2001, now U.S. Pat. No. 7,302,164, issued Nov. 27, 2007, which claims priority to U.S. Provisional Patent Application 60/181,985, filed on Feb. 11, 2000. The entire disclosures of these applications are hereby incorporated by reference herein in their entirety.

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

This invention relates to a system and method for the production of medical image data on portable digital recording media such as compact discs. More particularly, it relates to a system and method for receiving medical image data, processing medical image data, and transmitting medical image data to be recorded on a portable digital recording medium.

### 2. Description of the Related Art

Since the invention of the x-ray film, film has been the predominant multipurpose medium for the acquisition, storage, and distribution of medical images. However, the storage and distribution of film often requires considerable expenses in labor and storage space.

Today's modern hospitals utilize computer-aided imaging devices such as Computed Tomography (CT), Digital Subtracted Angiography, and Magnetic Resonance Imaging (MRI). These digital devices can generate hundreds of images in a matter of seconds. Many hospitals require these images to be printed on film for storage and distribution. To print complete sets of medical images from these digital devices, the cost in film material, storage space, and management efforts is often very high.

Some radiology departments have installed digital image storage and management systems known as PACS (Picture Archive Communication Systems). PACS are capable of storing a large amount of medical image data in digital form. PACS are made by manufacturers including GE, Siemens, and Fuji.

To ease the communication of data, the DICOM (Digital Imaging and Communications in Medicine) standard was developed by ACR-NEMA (American College of Radiology-National Electrical Manufacturer's Association) for communication between medical imaging devices and PACS. In addition to the examined images, patient demographics, and exam information such as patient name, patient age, exam number, exam modality, exam machine name, and exam date can also be stored and retrieved in DICOM compatible data format. A DICOM file stores patient and exam information in the header of the file, followed by the exam images. PACS store medical image data in DICOM format.

Digital medical image data can be stored on PACS and distributed using the Internet. However, many physicians' offices do not have the bandwidth suitable for fast download

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of medical image data. The concerns for medical data privacy and Internet security further reduce the desirability of Internet distribution.

## SUMMARY OF THE INVENTION

The claimed system allows for digital medical image data to be produced on a portable digital recording medium such as a CD. A CD containing the medical image data can be distributed to physicians, hospitals, patients, insurance companies, etc. One embodiment of the claimed system allows for medical image data to be placed on a CD along with a viewing program, so that a user can use any computer compatible with the CD to view the medical image data on the CD. One embodiment of the claimed system allows for searching medical exam data that are related and placing such data on the same CD.

One embodiment of the claimed system comprises a receiving module configured to receive medical image data, a processing module configured to process the received medical image data, and an output module configured to transmit the processed medical image data to a production station configured to produce the transmitted medical image data on portable digital recording medium, such as a CD. In one embodiment, the output module transmits a viewing program configured to view medical image data to the production station so that the viewing program is produced on the same CD as the medical image data. In another embodiment, the CD already contains the viewing program before the medical image data is transmitted to the CD production station.

In one embodiment of the claimed system, the processing module is configured to create and store audit information of the portable digital recording medium produced by the production station.

In another embodiment of the claimed system, the processing module is configured to identify the originating image input device of the received medical image data, and determine, on the basis of the originating image input device, whether to transmit the received medical image data to a production station. The processing module also selects, on the basis of the originating image input device, one of multiple production stations as the target production station.

Yet another embodiment of the claimed system is configured to retrieve medical image data that are related to the received medical image data, and transmit the retrieved related image data to the production station. In one embodiment, exam images of the same patient are considered related. In another embodiment, exam images of the same patient and the same modality are considered related. For example, two x-ray exams on the left hand of the same patient are considered related. In yet another embodiment, exam images of the same patient, the same modality and taken within a specified date range are considered related. For example, two x-ray exams on the left hand of the same patient taken within a two-month period are considered related. A hospital may also determine other scenarios of relatedness.

One claimed method comprises the steps of connecting a browsing terminal to a computer database configured to store medical image data, selecting medical image data from medical image data stored on the database, and recording the selected medical image data on portable digital recording medium. In one embodiment, the claimed method also comprises a step of recording a viewing program configured to view medical image data on the portable digital recording medium.

One embodiment of the claimed method further comprises the steps of finding and retrieving medical image data that are



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related to the selected medical image data, and recording related image data to portable digital recording medium.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates one embodiment of an image production system comprising an application server and portable digital recording medium production stations.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table.

FIG. 3 illustrates a process of receiving image data from image server, processing received image data, and transmitting such data to the production station. This process also retrieves and transmits related image data for production.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server, with the option of selecting and ordering the production of related image data.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates one embodiment of an image production system 100 comprising an application server 110 and one or more portable digital recording medium production stations 300A, 300B and 300C. In the preferred embodiment, the production stations 300A, 300B and 300C are CD (Compact Disc) production stations. Digital portable recording medium comprises CDs and DVDs (Digital Versatile Disc or Digital Video Disc). CDs may comprise CD-ROM (Compact Disc Read Only Memory), CD-R (Compact Disc Recordable), and CD-RW (Compact Disc Recordable and Writable). DVDs may comprise DVD-ROM (DVD Read Only Memory), DVD-R (DVD Recordable) and DVD-RAM (a standard for DVDs that can be read and written many times). Thus, although the following description refers primarily to CDs, those of ordinary skill in the art will understand that any suitable portable digital recording medium can be substituted for CDs.

The application server 110 is connected to one or more physician browsing terminals 400A, 400B and 400C through a computer network 600. Each physician browsing terminal 400A, 400B or 400C comprises a browsing program such as Internet Explorer or Netscape Communicator. Physicians or their assistants launch the browsing program to access the application server 110 through the network 600 in order to select medical image data stored on the application server database 114 to be produced by a production station 300A, 300B or 300C. In the preferred embodiment, the physician browsing terminals 400A, 400B and 400C are connected to the application server through an Intranet. One embodiment of the Intranet utilizes TCP/IP network protocol. The Intranet can connect one radiology department, multiple departments within a hospital, or multiple hospitals. In another embodiment the browsing terminals 400A, 400B and 400C are connected to the application server 110 through the Internet.

Still referring to FIG. 1, the application server 110 is also connected to an image server 200. The image server 200 is further connected to image input devices such as PACS 204, MRI machines 206, CT-scan machines 208, ultrasound machines 210, etc. In the preferred embodiment, the image server 200 is a DICOM image server configured to receive and store medical image data in DICOM format. In operation, the image server 200 receives medical image data from image input devices such as PACS 204, MRI machines 206, CT-scan

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machines 208 and ultrasound machines 210 and stores such image data in the image server database 202. A high-resolution image scanner 500 is also connected to the image server 200, so that medical image data stored on film can be scanned on the image scanner 500, transmitted to the image server 200 and stored in the image server database 202. In one embodiment, the image scanner 500 also converts the scanned image to DICOM format. The application server 110 receives input image data from the image server database 202, processes the received image data, and sends the image data to one of the production stations 300A, 300B or 300C to produce CDs.

The application server 110 comprises a viewing program 112, an application server database 114 that stores image data received from the image server 200, a production history database 116 that stores audit records on each CD produced, a display terminal 118 for programming and operating the application server 110 by a programmer or physician, and an image input device profile table 120.

Still referring to FIG. 1, the viewing program 112 is configured to allow users to read and manipulate medical image data. The viewing program 112 comprises multiple image manipulation functions, such as rotating images, zooming in and zooming out, measuring the distance between two points, etc. The viewing program 112 also allows users to read the patient demographics and exam information associated with the image data. The viewing program 112 used in the preferred embodiment is produced by eFilm Medical Inc. located in Toronto, Canada. The viewing program 112 used in the preferred embodiment is an abbreviated version with fewer functions and takes less storage space, in order to maximize the storage space for image data on a CD. The image server 200 used in the preferred embodiment is also made by eFilm Medical Inc.

The CD production stations 300A, 300B and 300C in the preferred embodiment are produced by Rimage Corporation in Edina, Minn. Details about the Rimage CD production stations can be found in U.S. Pat. Nos. 5,542,768, 5,734,629, 5,914,918, 5,946,276, and 6,041,703, which are incorporated herein by reference in their entirety.

The application server 110 in the preferred embodiment runs on a personal computer running a 400 MHz Celeron or Pentium II/III chip, with Windows 98 or NT as the operating system.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table 120. The image input device profile table 120 contains a profile record for each image input device. Each image input device's profile record comprises: (1) an "auto-produce" logical field 250 indicating whether medical image data from this image input device should be produced on CD automatically by the image production system 100, (2) a "target production station" field 252 identifying one of the production stations 300A, 300B or 300C on which medical image data is to be produced, and (3) a "related data storage" 254 field identifying the medical image data storage units in which to search for the related image data. A medical image data storage unit is a storage unit that stores medical image data and is connected to the application server 110. In one embodiment, a medical image data storage unit is connected to the application server 110 through the image server 200. In the preferred embodiment, PACS 204 is such a medical image data storage unit.

In FIG. 2, the sample profile table 120 contains profile records for MRI Machine I, MRI Machine II, and Ultrasound Machine I. For MRI Machine I, the "auto-produce" field 250 contains a "yes" value, directing the image production system 100 to automatically produce image data originating from MRI Machine I on portable digital recording medium. Its



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"target production station" field 252 contains a "Production Station A" value, directing the image production system 100 to produce image data originating from MRI Machine I on production station A. Its "related data storage" field 254 is "PACS I", directing the image production system 100 to retrieve related medical image data from PACS I. For MRI Machine II, the "auto-produce" field 250 is "no", directing the image production system 100 to not automatically produce image data originating from MRI Machine II on portable digital recording medium. Since image data from MRI Machine II will not be automatically produced, the "target production station" field 252 and the "related data storage" field 254 are irrelevant. For Ultrasound Machine I, the "auto-produce" field 250 is "yes", and its "target production" field 252 is "Production Station B". Its "related data storage" field 254 contains a value of "PACS I, PACS II", directing the image production system 100 to search PACS I and PACS II for related medical image data.

FIG. 3 illustrates a process of the application server 110 receiving image data from the image server 200, processing the received image data, and transmitting such data to the production station 300A, 300B or 300C. The application server 110 continuously monitors the image server database 202 in step 122. In one embodiment, the application server continuously "pings" the network address corresponding to the image server 200 on the network that connects the application server 110 with the image server 200.

Still referring to FIG. 3, the application server 110 determines if the image server database 202 is changing, in step 124. In the preferred embodiment, the application server 110 makes that determination by detecting whether the image server database 202 is increasing in size. If there is no change in the image server database 202, then the application server 110 returns to step 122 to continue monitoring. If there is change in the image server database 202, then the application server 110 proceeds to step 126 and time-stamps the moment that the change started. The application server 110 then proceeds to step 128 and waits for an interval, typically 35 to 65 seconds. After the interval, the application server 110 checks whether the image server database 202 is still changing, in step 130. If the image server database 202 is still changing then the application server 110 returns to step 128 to wait for another interval. If the image server database 202 is no longer changing, then the application server 110 proceeds to step 132 and copies the data changed since the time-stamped moment. This changed data is copied from the image server database 202 to the application server database 114.

The application server 110 proceeds to step 134 and finds the input image device name or identification number from the newly received image data. In the preferred embodiment, image data from the image server database 202 are stored in DICOM format, and the input image device name or identification number is stored in the header of the DICOM format image data file. The input image device name/ID indicates the origin of the newly received data. The application server 110 proceeds to step 136 and uses the found input image device name/ID to find a corresponding profile record in the image input device profile table 120. If the profile record has an "auto-produce" field 250 with a "no" value, the application server 110 returns from step 138 to step 122 to continue monitoring the image server database 202. If the "auto-produce" field 250 contains a "yes" value, the application server 110 proceeds from step 138 to step 140, and determines the target production station 300A, 300B or 300C from the "target production station" field 252 of the profile record. In step 140, the application server 110 also determines the value in the "related data storage" field 254 of the profile record.

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Still referring to FIG. 3, in step 142, the application server 110 sends a copy of the newly received data, along with a copy of the viewing program 112, to the target production station 300A, 300B or 300C identified in step 140. With the viewing program attached, the image data on each CD produced by the target production station 300A, 300B or 300C can be viewed on any computer that accepts the CD, regardless of whether that computer has its own viewing program installed. In one embodiment, the data received in step 132 is stored in the application server database 114 before it is transmitted to the target production station 300A, 300B or 300C in step 142. In another embodiment, the application server 110 transmits the data received in step 132 to the target production station 300A, 300B or 300C, without storing a copy of the data in the application server database 114.

In one embodiment, the application server 110 does not send a copy of the viewing program 112 to the target production station during step 142. Rather, the application server 110 sends a copy of the received medical image data to the production station 300A, 300B or 300C to be recorded on pre-burned CDs. Each pre-burned CD contains a viewing program already recorded onto the CD before step 142.

In step 142, the application server 110 also sends configuration data to the target production station 300A, 300B or 300C. The configuration data comprises a label-printing file comprising the specification for printing labels on top of the CDs, and a "number of copies" value indicating the number of copies of CDs to be produced. A typical specification in the label-printing file may specify information such as patient name, exam modality, hospital name, physician name, production date, etc. to be printed by the target production station as a label on the top of each CD produced.

Still referring to FIG. 3, in step 143, the application server 110 searches the application server database 114 for image data related to the newly received data. The application server 110 then searches the PACS systems identified in the "related data storage" field 254 in step 140 for data related to the newly received data. Some PACS systems each comprise a primary image data storage and an archive image data storage, and the application server 110 searches both the primary image data storage and the archive image data storage on these PACS systems. The application server 110 is connected to the PACS systems through the image server 200. The application server 110 retrieves found related data from the PACS systems and stores a copy of such found related data in the application server database 114. The application server 110 sends a copy of related data that are found from the application server database 114 or the PACS systems to the target production station 300A, 300B or 300C. The medical image data originally received in step 132 and the related medical image data are produced by the target production station 300A, 300B or 300C on the same CDs for comparative study.

For each CD to be produced, the application server 110 adds one audit record to the production history database 116 in step 144. The new audit record comprises the identification number of the CD and other relevant information about the CD, such as the physician who requested the production (if any), and the names of the patients whose exam images are on that CD.

Steps 142, 143 and 144 may be executed immediately before, concurrent with, or immediately after one another.

The target production station 300A, 300B or 300C produces the CDs containing the medical image data and the viewing program sent to it, and prints a label on top of every CD, corresponding to the specification in the label-printing file. The number of CDs produced corresponds to the "number of copies" number sent by the application server 110 in







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server 110 erases data in the new data database. The storage data database stores all data that has ever been received from the image server database 202. In the processes described by FIG. 4 and FIG. 5, a user selects images for production from the storage data database.

Several modules are described in the specification and the claims. The modules may advantageously be configured to reside on an addressable storage medium and configured to execute on one or more processors. The modules may include, but are not limited to, software or hardware components that perform certain tasks. Thus, a module may include, for example, object-oriented software components, class components, processes methods, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables. Modules may be integrated into a smaller number of modules. One module may also be separated into multiple modules.

Although the foregoing has been a description and illustration of specific embodiments of the invention, various modifications and changes can be made thereto by persons skilled in the art, without departing from the scope and spirit of the invention as defined by the following claims.

What is claimed is:

1. A system comprising:
  - a medical image server configured to receive medical image data generated by one or more imaging modalities, the medical image data being formatted in a standard medical imaging format;
  - a database configured to store medical image data generated by the one or more imaging modalities;
  - a plurality of browsing terminals configured to receive a user selection that defines selected medical image data for a patient;
  - a search module configured to automatically search the database for related data based on the user selection; and
  - a production station that is configured to record all of the following onto a data storage medium:
    - the selected medical image data for the patient, recorded in the standard medical imaging format, the related data, and a viewing program that is configured to allow viewing of medical image data that is recorded onto the data storage medium by a general purpose computer that is not specifically configured with medical imaging software for viewing of medical images formatted in the standard medical imaging format.
2. The system of claim 1, further comprising a configuration data module configured to allow a user to input identifying information relating to the selected medical image data.
3. The system of claim 2, wherein the production station is configured to produce a label for the data storage medium, the label containing the identifying information.
4. The system of claim 1, further comprising an audit module that is configured to automatically provide an auditable trail of the selected medical image data.
5. The system of claim 4, wherein the auditable trail of the selected medical image data includes a record of when the

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selected medical image data and the related medical image data were recorded onto the data storage medium.

6. The system of claim 4, wherein the auditable trail of the selected medical image data includes identifying information corresponding to the production station used to record the selected medical image data and the related data onto the data storage medium.

7. The system of claim 1, wherein the data storage medium is an optical disk.

8. A method of recording medical image data and related data onto a data storage medium, the method comprising:

- receiving medical image data from one or more imaging modalities, the received medical image data being formatted in a standard medical imaging format;
- storing the received medical image data in a database;
- receiving a user selection that defines selected medical image data for a patient;
- automatically searching the database for related data based on the user selection;

recording the selected medical image data for the patient and the related data onto a data storage medium using a production station, the selected medical image data being recorded on the data storage medium in the standard medical imaging format;

recording a viewing program onto the data storage medium using the production station, the viewing program being configured to allow viewing of medical image data stored on the data storage medium on a general purpose computer that is not specifically configured with medical imaging software for viewing of medical images formatted in the standard medical imaging format; and labeling the data storage medium with a label that includes identifying information associated with the selected medical image data.

9. The method of claim 8, wherein the user interface is further configured to collect the identifying information from the user.

10. The method of claim 8, further comprising generating an auditable trail of the selected medical image data, wherein the auditable trail includes a record of when the selected medical image data and the related medical image data were recorded onto the data storage medium.

11. The method of claim 8, wherein receiving a user selection comprises selecting one or more patients from a list of patients having medical image data stored in the database.

12. The method of claim 8, wherein the plurality of imaging modalities includes an image scanner configured to generate medical image data in a DICOM-compatible format from film.

13. The method of claim 8, wherein the data storage medium is an optical disk.

14. The method of claim 8, wherein recording the selected medical image data and the related data further comprises selecting a production station from a plurality of production stations that are connected to the database via a computer network.

\* \* \* \* \*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,783,174 B2  
APPLICATION NO. : 12/484100  
DATED : August 24, 2010  
INVENTOR(S) : Wright et al.

Page 1 of 3

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 2, Page 3 (Item 56), Line 17, under Other Publications, change "BringharnRAD:"  
to --BringhamRAD:--.

In Column 2, Page 3 (Item 56), Line 37, under Other Publications, change "Johnson," to  
--Johnston,--.

In Column 2, Page 4 (Item 56), Line 43, under Other Publications, change "at al.," to  
--et al.,--.

In Column 1, Page 5 (Item 56), Line 42, under Other Publications, change "EurIPACS," to  
--EuroPACS,--.

In Column 2, Page 5 (Item 56), Line 14, under Other Publications, change "DeJamette" to  
--DeJarnette--.

In Column 2, Page 5 (Item 56), Line 16, under Other Publications, change "Entwickiung" to  
--Entwicklung--.

In Column 1, Page 6 (Item 56), Line 58, under Other Publications, change "Acculmage" to  
--Accuimage--.

In Column 1, Page 7 (Item 56), Line 67, under Other Publications, change "HIPPA"," to  
--HIPAA",--.

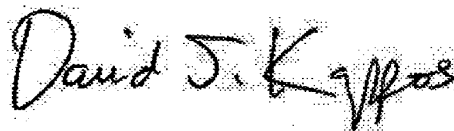
In Column 2, Page 7 (Item 56), Line 1, under Other Publications, change "et all," to --et al.,--.

In Column 1, Page 10 (Item 56), Line 57, under Other Publications, change "Mitre" to  
--Mitra--.

In Column 1, Page 10 (Item 56), Line 63, under Other Publications, change "Mitre" to  
--Mitra--.

In Column 2, Page 10 (Item 56), Line 38, under Other Publications, change  
"radiographics.rsnajnl.org" to --radiographics.rsnajnl.org--.

Signed and Sealed this  
Twenty-ninth Day of March, 2011



David J. Kappos  
Director of the United States Patent and Trademark Office



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,783,174 B2**

Page 2 of 3

In Column 1, Page 11 (Item 56), Line 36, under Other Publications, change ““MedlImage” to  
 --“Medimage--.

In Column 1, Page 11 (Item 56), Line 44, under Other Publications, change “Description” to  
 --Description--.

In Column 2, Page 11 (Item 56), Line 38, under Other Publications, change “MedlImage” to  
 --Medimage--.

In Column 2, Page 11 (Item 56), Line 43, under Other Publications, change “MBA,,” to  
 --MBA.,--.

In Column 1, Page 12 (Item 56), Line 15, under Other Publications, change “Servise” to  
 --Service--.

In Column 1, Page 12 (Item 56), Line 22, under Other Publications, change “Mitre” to  
 --Mitra--.

In Column 1, Page 12 (Item 56), Line 28, under Other Publications, change “Mitre” to  
 --Mitra--.

In Column 1, Page 12 (Item 56), Line 37, under Other Publications, change “Mitre” to  
 --Mitra--.

In Column 1, Page 12 (Item 56), Line 45, under Other Publications, change “Mitre” to  
 --Mitra--.

In Column 2, Page 12 (Item 56), Line 55, under Other Publications, change “PerfectImage” to  
 --Perfectimage--.

In Column 1, Page 13 (Item 56), Line 44, under Other Publications, change “Mitre” to  
 --Mitra--.

In Column 2, Page 13 (Item 56), Line 48, under Other Publications, change “BaSed” to  
 --Based--.

In Column 2, Page 14 (Item 56), Line 46, under Other Publications, change “Medial” to  
 --Medical--.

In Column 1, Page 15 (Item 56), Line 4, under Other Publications, change “Gmbh,,” to  
 --GmbH,--.

In Column 1, Page 15 (Item 56), Line 21, under Other Publications, change “MedlImage” to  
 --Medimage--.

In Column 1, Page 15 (Item 56), Line 32, under Other Publications, change “Advertisist” to  
 --Advertisist--.

In Column 1, Page 15 (Item 56), Line 36, under Other Publications, change “MedlImage” to  
 --Medimage--.



**CERTIFICATE OF CORRECTION (continued)**

Page 3 of 3

**U.S. Pat. No. 7,783,174 B2**

In Column 1, Page 15 (Item 56), Line 38, under Other Publications, change “MedImage” to --Medimage--.

In Column 1, Page 15 (Item 56), Line 40, under Other Publications, change “MedImage” to --Medimage--.

In Column 10, Line 1, in Claim 5, change “medial” to --medical--.

In Column 10, Line 6, in Claim 6, change “medial” to --medical--.

In Column 10, Line 41, in Claim 10, change “medial” to --medical--.



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# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

August 26, 2011

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM  
THE RECORDS OF THIS OFFICE OF:

U.S. PATENT: 7,734,157

ISSUE DATE: June 08, 2010

By Authority of the  
Under Secretary of Commerce for Intellectual Property  
and Director of the United States Patent and Trademark Office



*E. Bornett*  
E. BORNETT  
Certifying Officer





US007734157B2

(12) **United States Patent**  
**Wright et al.**

(10) **Patent No.:** **US 7,734,157 B2**  
(45) **Date of Patent:** **Jun. 8, 2010**

(54) **SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA**

FOREIGN PATENT DOCUMENTS

CA 2322191 4/2000

(75) Inventors: **Ken Wright**, Chino Hills, CA (US);  
**Chet LaGuardia**, Rancho Santa Margarita, CA (US)

(Continued)

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(73) Assignee: **Datcard Systems, Inc.**, Irvine, CA (US)

TREX Medical Corporation, XRE Division, "SPEC, FUNC, TREXnet HR Image Network," last revision dated Jan. 25, 2000.

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(Continued)

*Primary Examiner*—Huy T Nguyen

(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear LLP

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(22) Filed: **Jun. 24, 2009**

(57) **ABSTRACT**

(65) **Prior Publication Data**

US 2009/0252479 A1 Oct. 8, 2009

**Related U.S. Application Data**

(63) Continuation of application No. 11/942,630, filed on Nov. 19, 2007, which is a continuation of application No. 09/761,795, filed on Jan. 17, 2001, now Pat. No. 7,302,164.

(60) Provisional application No. 60/181,985, filed on Feb. 11, 2000.

(51) **Int. Cl.**  
**H04N 5/91** (2006.01)

(52) **U.S. Cl.** ..... **386/125; 386/126; 705/2; 705/3**

(58) **Field of Classification Search** ..... **386/95, 386/125, 126; 705/2, 3, 5**  
See application file for complete search history.

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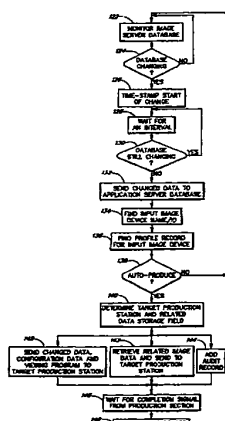
**U.S. PATENT DOCUMENTS**

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This application discloses a system for recording medical image data for production on a portable digital recording medium such as CDs and DVDs. This system includes a receiving module, a processing module and an output module, with viewing program for viewing medical image data stored on the portable digital recording medium. It also discloses a method of storing medical image data on a portable digital recording medium, including the steps of receiving the medical image data, processing the data and storing the data on the portable digital recording medium, with a viewing program for viewing medical image data stored on the portable digital recording medium. It further discloses a method of selecting medical image data for recording on a portable digital recording medium, including the steps of connecting a browsing terminal to a computer database that stores the medical image data, selecting a first set of the medical image data from the computer database, and recording the selected first set of medical image data on the portable digital medium, with a viewing program for viewing the medical image data stored on the portable digital recording medium. It also discloses the method and system of retrieving medical image data that are related to the received/selected original medical image data, and recording the original and related medical image data on a portable digital recording medium.

(Continued)

12 Claims, 5 Drawing Sheets





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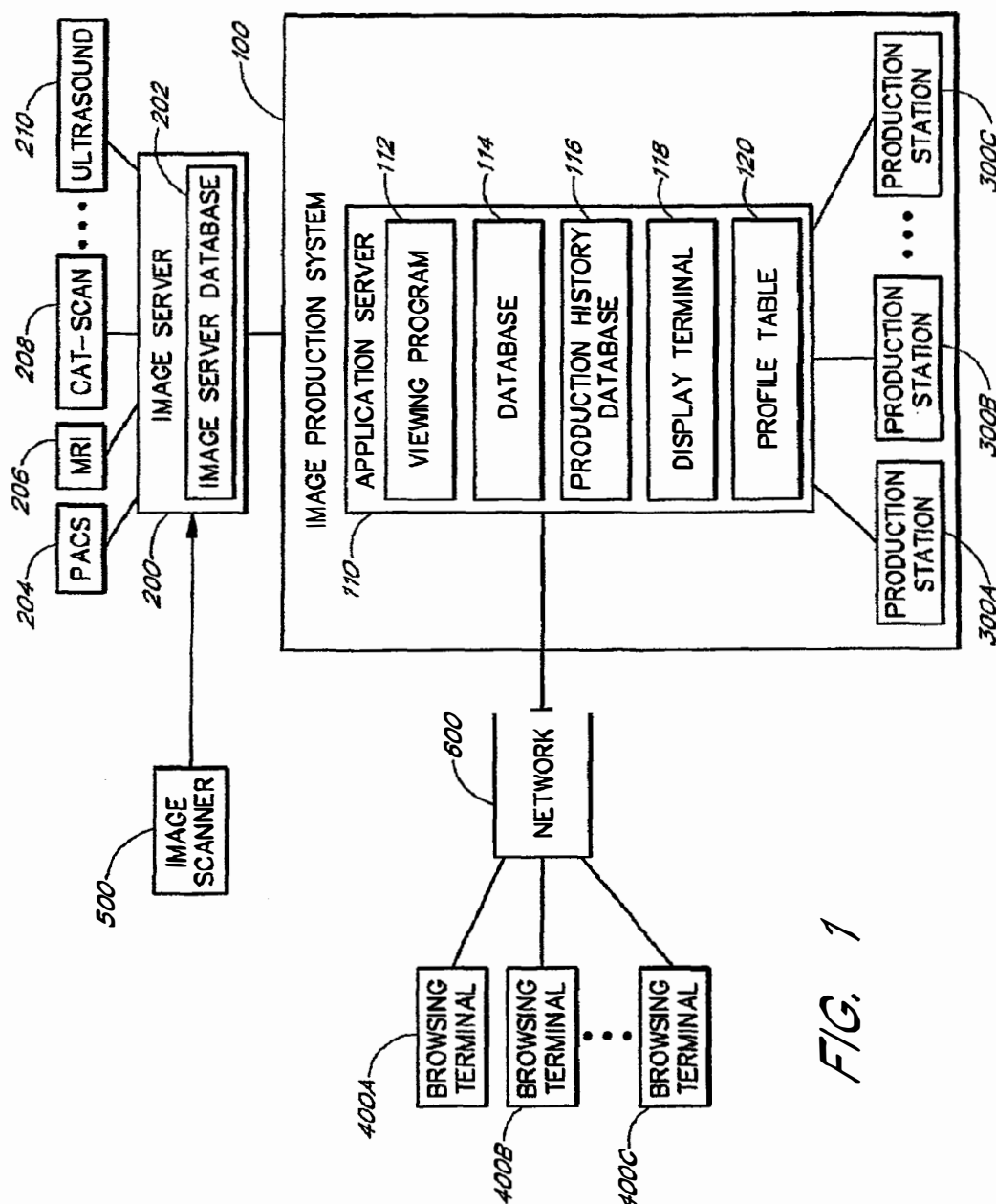


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120

250		252		254	
IMAGE INPUT DEVICES	FIELDS	AUTO-PRODUCE 1	TARGET PRODUCTION STATION	RELATED DATA STORAGE	
MRI MACHINE I		YES	PRODUCTION STATION A	PACS 1	
MRI MACHINE II		NO			
ULTRASOUND MACHINE I		YES	PRODUCTION STATION B	PACS 1, PACS 2	

FIG. 2



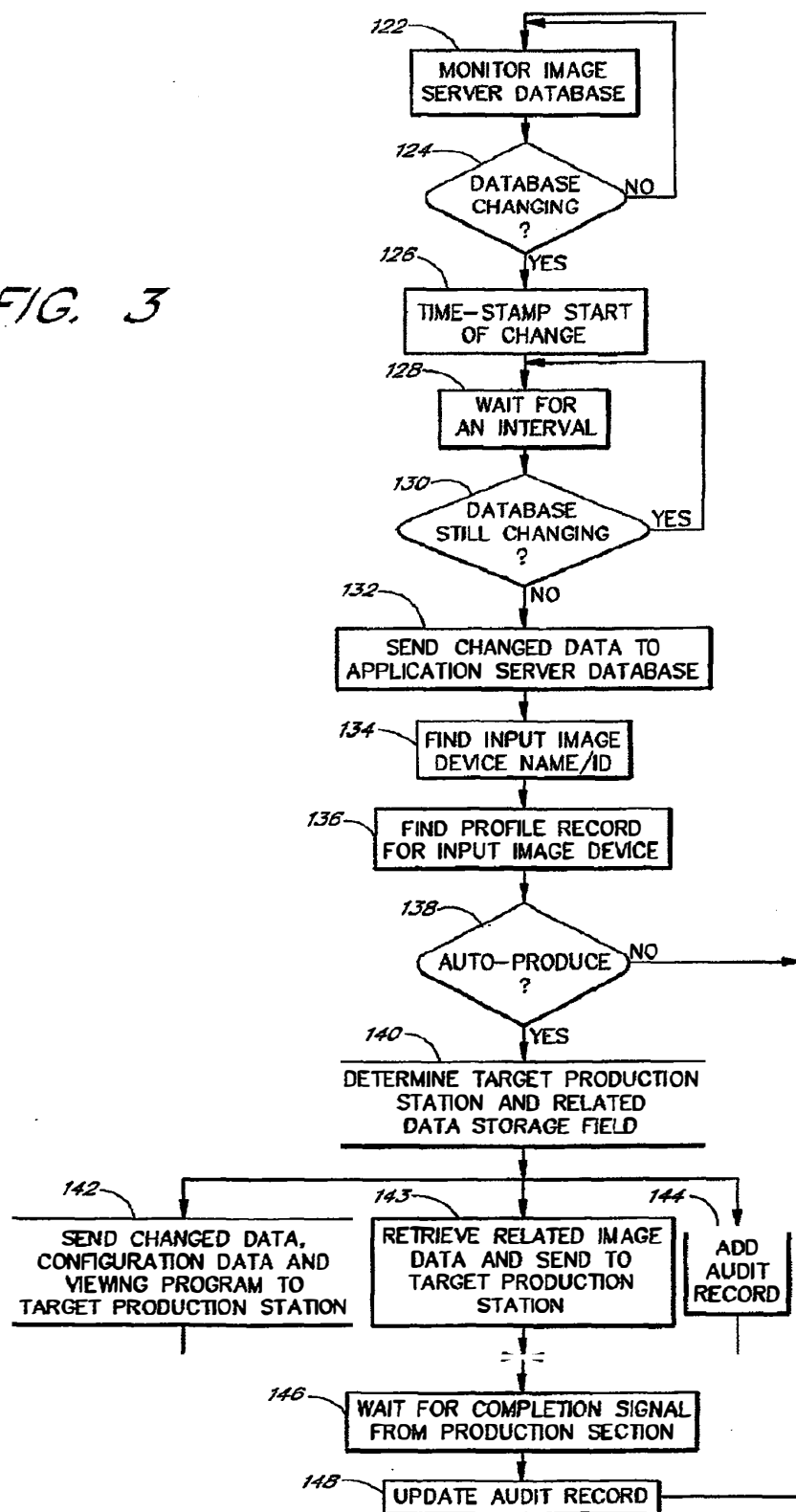
U.S. Patent

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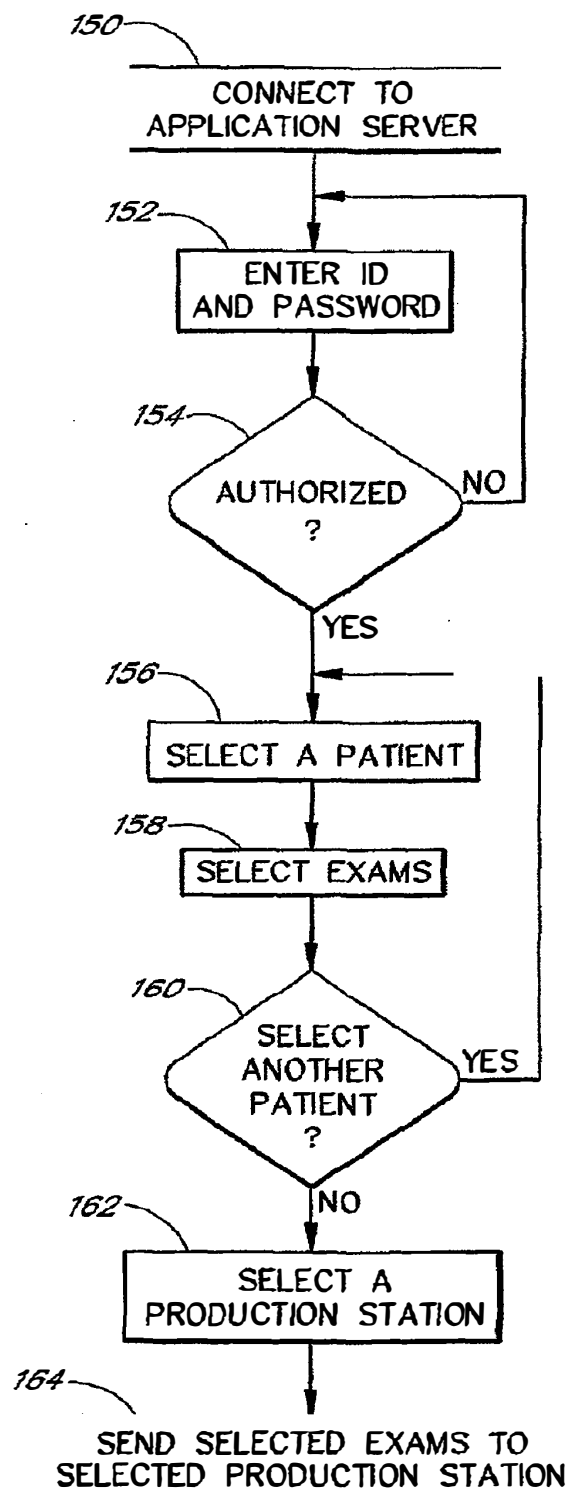
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FIG. 3









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## 2

## SUMMARY OF THE INVENTION

The claimed system allows for digital medical image data to be produced on a portable digital recording medium such as a CD. A CD containing the medical image data can be distributed to physicians, hospitals, patients, insurance companies, etc. One embodiment of the claimed system allows for medical image data to be placed on a CD along with a viewing program, so that a user can use any computer compatible with the CD to view the medical image data on the CD. One embodiment of the claimed system allows for searching medical exam data that are related and placing such data on the same CD.

One embodiment of the claimed system comprises a receiving module configured to receive medical image data, a processing module configured to process the received medical image data, and an output module configured to transmit the processed medical image data to a production station configured to produce the transmitted medical image data on portable digital recording medium, such as a CD. In one embodiment, the output module transmits a viewing program configured to view medical image data to the production station so that the viewing program is produced on the same CD as the medical image data. In another embodiment, the CD already contains the viewing program before the medical image data is transmitted to the CD production station.

In one embodiment of the claimed system, the processing module is configured to create and store audit information of the portable digital recording medium produced by the production station.

In another embodiment of the claimed system, the processing module is configured to identify the originating image input device of the received medical image data, and determine, on the basis of the originating image input device, whether to transmit the received medical image data to a production station. The processing module also selects, on the basis of the originating image input device, one of multiple production stations as the target production station.

Yet another embodiment of the claimed system is configured to retrieve medical image data that are related to the received medical image data, and transmit the retrieved related image data to the production station. In one embodiment, exam images of the same patient are considered related. In another embodiment, exam images of the same patient and the same modality are considered related. For example, two x-ray exams on the left hand of the same patient are considered related. In yet another embodiment, exam images of the same patient, the same modality and taken within a specified date range are considered related. For example, two x-ray exams on the left hand of the same patient taken within a two-month period are considered related. A hospital may also determine other scenarios of relatedness.

One claimed method comprises the steps of connecting a browsing terminal to a computer database configured to store medical image data, selecting medical image data from medical image data stored on the database, and recording the selected medical image data on portable digital recording medium. In one embodiment, the claimed method also comprises a step of recording a viewing program configured to view medical image data on the portable digital recording medium.

One embodiment of the claimed method further comprises the steps of finding and retrieving medical image data that are

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related to the selected medical image data, and recording related image data to portable digital recording medium.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates one embodiment of an image production system comprising an application server and portable digital recording medium production stations.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table.

FIG. 3 illustrates a process of receiving image data from image server, processing received image data, and transmitting such data to the production station. This process also retrieves and transmits related image data for production.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server, with the option of selecting and ordering the production of related image data.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates one embodiment of an image production system 100 comprising an application server 110 and one or more portable digital recording medium production stations 300A, 300B and 300C. In the preferred embodiment, the production stations 300A, 300B and 300C are CD (Compact Disc) production stations. Digital portable recording medium comprises CDs and DVDs (Digital Versatile Disc or Digital Video Disc). CDs may comprise CD-ROM (Compact Disc Read Only Memory), CD-R (Compact Disc Recordable), and CD-RW (Compact Disc Recordable and Writable). DVDs may comprise DVD-ROM (DVD Read Only Memory), DVD-R (DVD Recordable) and DVD-RAM (a standard for DVDs that can be read and written many times). Thus, although the following description refers primarily to CDs, those of ordinary skill in the art will understand that any suitable portable digital recording medium can be substituted for CDs.

The application server **110** is connected to one or more physician browsing terminals **400A**, **400B** and **400C** through a computer network **600**. Each physician browsing terminal **400A**, **400B** or **400C** comprises a browsing program such as Internet Explorer or Netscape Communicator. Physicians or their assistants launch the browsing program to access the application server **110** through the network **600** in order to select medical image data stored on the application server database **114** to be produced by a production station **300A**, **300B** or **300C**. In the preferred embodiment, the physician browsing terminals **400A**, **400B** and **400C** are connected to the application server through an Intranet. One embodiment of the Intranet utilizes TCP/IP network protocol. The Intranet can connect one radiology department, multiple departments within a hospital, or multiple hospitals. In another embodiment the browsing terminals **400A**, **400B** and **400C** are connected to the application server **110** through the Internet.

Still referring to FIG. 1, the application server 110 is also connected to an image server 200. The image server 200 is further connected to image input devices such as PACS 204, MRI machines 206, CT-scan machines 208, ultrasound machines 210, etc. In the preferred embodiment, the image server 200 is a DICOM image server configured to receive and store medical image data in DICOM format. In operation, the image server 200 receives medical image data from image input devices such as PACS 204, MRI machines 206, CT-scan

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machines **208** and ultrasound machines **210** and stores such image data in the image server database **202**. A high-resolution image scanner **500** is also connected to the image server **200**, so that medical image data stored on film can be scanned on the image scanner **500**, transmitted to the image server **200** and stored in the image server database **202**. In one embodiment, the image scanner **500** also converts the scanned image to DICOM format. The application server **110** receives input image data from the image server database **202**, processes the received image data, and sends the image data to one of the production stations **300A**, **300B** or **300C** to produce CDs.

The application server **110** comprises a viewing program **112**, an application server database **114** that stores image data received from the image server **200**, a production history database **116** that stores audit records on each CD produced, a display terminal **118** for programming and operating the application server **110** by a programmer or physician, and an image input device profile table **120**.

Still referring to FIG. 1, the viewing program 112 is configured to allow users to read and manipulate medical image data. The viewing program 112 comprises multiple image manipulation functions, such as rotating images, zooming in and zooming out, measuring the distance between two points, etc. The viewing program 112 also allows users to read the patient demographics and exam information associated with the image data. The viewing program 112 used in the preferred embodiment is produced by eFilm Medical Inc. located in Toronto, Canada. The viewing program 112 used in the preferred embodiment is an abbreviated version with fewer functions and takes less storage space, in order to maximize the storage space for image data on a CD. The image server 200 used in the preferred embodiment is also made by eFilm Medical Inc.

The CD production stations **300A**, **300B** and **300C** in the preferred embodiment are produced by Rimage Corporation in Edina, Minn. Details about the Rimage CD production stations can be found in U.S. Pat. Nos. 5,542,768, 5,734,629, 5,914,918, 5,946,276, and 6,041,703, which are incorporated herein by reference in their entirety.

The application server 110 in the preferred embodiment runs on a personal computer running a 400 MHz Celeron or Pentium II/III chip, with Windows 98 or NT as the operating system.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table 120. The image input device profile table 120 contains a profile record for each image input device. Each image input device's profile record comprises: (1) an "auto-produce" logical field 250 indicating whether medical image data from this image input device should be produced on CD automatically by the image production system 100, (2) a "target production station" field 252 identifying one of the production stations 300A, 300B or 300C on which medical image data is to be produced, and (3) a "related data storage" 254 field identifying the medical image data storage units in which to search for the related image data. A medical image data storage unit is a storage unit that stores medical image data and is connected to the application server 110. In one embodiment, a medical image data storage unit is connected to the application server 110 through the image server 200. In the preferred embodiment, PACS 204 is such a medical image data storage unit.

In FIG. 2, the sample profile table 120 contains profile records for MRI Machine I, MRI Machine II, and Ultrasound Machine I. For MRI Machine I, the "auto-produce" field 250 contains a "yes" value, directing the image production system 100 to automatically produce image data originating from MRI Machine I on portable digital recording medium. Its







In one embodiment, the user is also prompted to select the number of copies of CDs to be produced. In another embodiment, the number of copies is set at one without prompting for user direction. As described above in connection with FIG. 3, in step 164, the application server 110 sends a copy of the

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The above paragraphs describe the application server **110** with one database **114** for image data storage. In another embodiment, the application server **110** includes two databases for image data storage: a new data database and a storage data database. The new data database stores only the most recent batch of new data just received from the image server **200**. After the data in the new data database is sent to a production station **300A**, **300B** or **300C**, the application server **110** erases data in the new data database. The storage



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data database stores all data that has ever been received from the image server database 202. In the processes described by FIG. 4 and FIG. 5, a user selects images for production from the storage data database.

Several modules are described in the specification and the claims. The modules may advantageously be configured to reside on an addressable storage medium and configured to execute on one or more processors. The modules may include, but are not limited to, software or hardware components that perform certain tasks. Thus, a module may include, for example, object-oriented software components, class components, processes methods, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables. Modules may be integrated into a smaller number of modules. One module may also be separated into multiple modules.

Although the foregoing has been a description and illustration of specific embodiments of the invention, various modifications and changes can be made thereto by persons skilled in the art, without departing from the scope and spirit of the invention as defined by the following claims.

What is claimed is:

1. A computer-implemented method for generating a portable computer-readable medium containing medical data for a first patient, wherein the medical data for the first patient are audited based on a plurality of audit records stored in an audit database, comprising:

receiving, via a computer-implemented interface from a requester, one or more requests for production of stored medical data related to the first patient; and

for each request for production of stored medical data related to the first patient:

producing the portable computer-readable medium containing the requested medical data related to the first patient, wherein the requested medical data comprises medical image data formatted in a standard medical imaging format used by a computer configured for viewing the medical image data; and

upon producing the computer-readable medium, automatically transmitting, to the audit database, audit data that is specific to the computer-readable medium produced in response to the request for stored medical data, wherein the audit data comprises at least an identification specific to the computer-readable medium, an identification of the requester of the stored medical data, and an identification of the first patient, wherein the audit data is for at least one audit record in the plurality of audit records in the audit database.

2. The method of claim 1, wherein the method further comprises storing the audit data on a portable computer-readable medium.

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3. The method of claim 1, wherein the audit data comprises an identification number of the portable computer-readable medium.

4. The method of claim 1, wherein the audit data comprises an alpha-numeric code representing the requester.

5. The method of claim 1, wherein the audit data comprises an alpha-numeric code representing the first patient.

6. The method of claim 1, wherein the audit data comprises the date and time that the requested medical data related to the first patient was recorded to the portable computer-readable medium.

7. A system for generating a portable computer-readable medium containing medical data for a first patient, wherein the medical data for the first patient are audited based on a plurality of audit records stored in an audit database, comprising:

a computer-implemented interface configured to receive two or more requests for production of stored medical data related to the first patient; and

an image production module that is configured, for each request for production of stored medical data related to the first patient;

to produce the portable computer-readable medium containing the requested medical data related to the first patient, wherein the requested medical data comprises medical image data formatted in a standard medical imaging format used by a computer configured for viewing the medical image data; and

upon producing the computer-readable medium, to automatically transmit, to the audit database, audit data that is specific to the computer-readable medium produced in response to the request for stored medical data, wherein the audit data comprises at least an identification specific to the computer-readable medium, an identification of a requester of the stored medical data, and an identification of the first patient, and is for at least one audit record in the plurality of audit records in the audit database.

8. The system of claim 7, wherein the image production module is further configured to store the audit data on a portable computer-readable medium.

9. The system of claim 7, wherein the audit data comprises an identification number of the portable computer-readable medium.

10. The system of claim 7, wherein the audit data comprises an alpha-numeric code representing the requester of the stored medical data.

11. The system of claim 7, wherein the audit data comprises an alpha-numeric code representing the first patient.

12. The system of claim 7, wherein the audit data comprises the date and time that the requested medical data related to the first patient was recorded to the portable computer-readable medium.

\* \* \* \* \*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,734,157 B2  
APPLICATION NO. : 12/491178  
DATED : June 8, 2010  
INVENTOR(S) : Ken Wright et al.

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page,

At (Item 56), Page 5, Line 18, Under Other Publications, change "Heath" to --Health--.

At (Item 56), Page 5, Line 24, Under Other Publications, change "et al," to --et al.,--.

At (Item 56), Page 5, Line 24, Under Other Publications, change "Doman" to --Domain--.

At (Item 56), Page 5, Line 53, Under Other Publications, change "Streamline" to  
--Streamlined--.

At (Item 56), Page 6, Line 58, Under Other Publications, change "Offic" to --Office--.

At (Item 56), Page 7, Line 33, Under Other Publications, change "Well-Beinq," to  
--Well-Being,"--.

At (Item 56), Page 8, Line 52, Under Other Publications, change "111," to --111,--.

At (Item 56), Page 8, Line 47, Under Other Publications, change "Parts," to --Paris--.

At (Item 56), Page 8, Line 66, Under Other Publications, after "3pages" insert --,--.

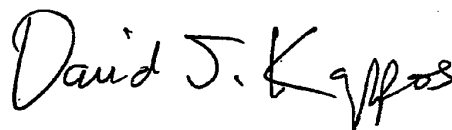
At (Item 56), Page 9, Line 1, Under Other Publications, change "Desecription" to  
--Description--.

At (Item 56), Page 10, Line 53, Under Other Publications, change "Summ'y," to  
--Summary,--.

At (Item 56), Page 10, Line 18, Under Other Publications, change "PerfectImage" to  
--PerfectImage--.

Signed and Sealed this

Thirtieth Day of November, 2010



David J. Kappos  
*Director of the United States Patent and Trademark Office*



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,734,157 B2**

Page 2 of 2

On the Title Page,

At (Item 56), Page 13, Line 21, Under Other Publications, change “MedImage” to  
--MedImage--.

At (Item 56), Page 13, Line 32, Under Other Publications, change “Advertisist” to  
--Advertisist--.

At (Item 56), Page 13, Line 39, Under Other Publications, change “MedImage” to  
--MedImage--.

At Sheet 3 of 5 (Reference Numeral 146) (FIG.3), Line 2, change “SECTION” to --STATION--.



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# THE UNITED STATES OF AMERICA

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M. K. CARTER  
Certifying Officer









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Page 2

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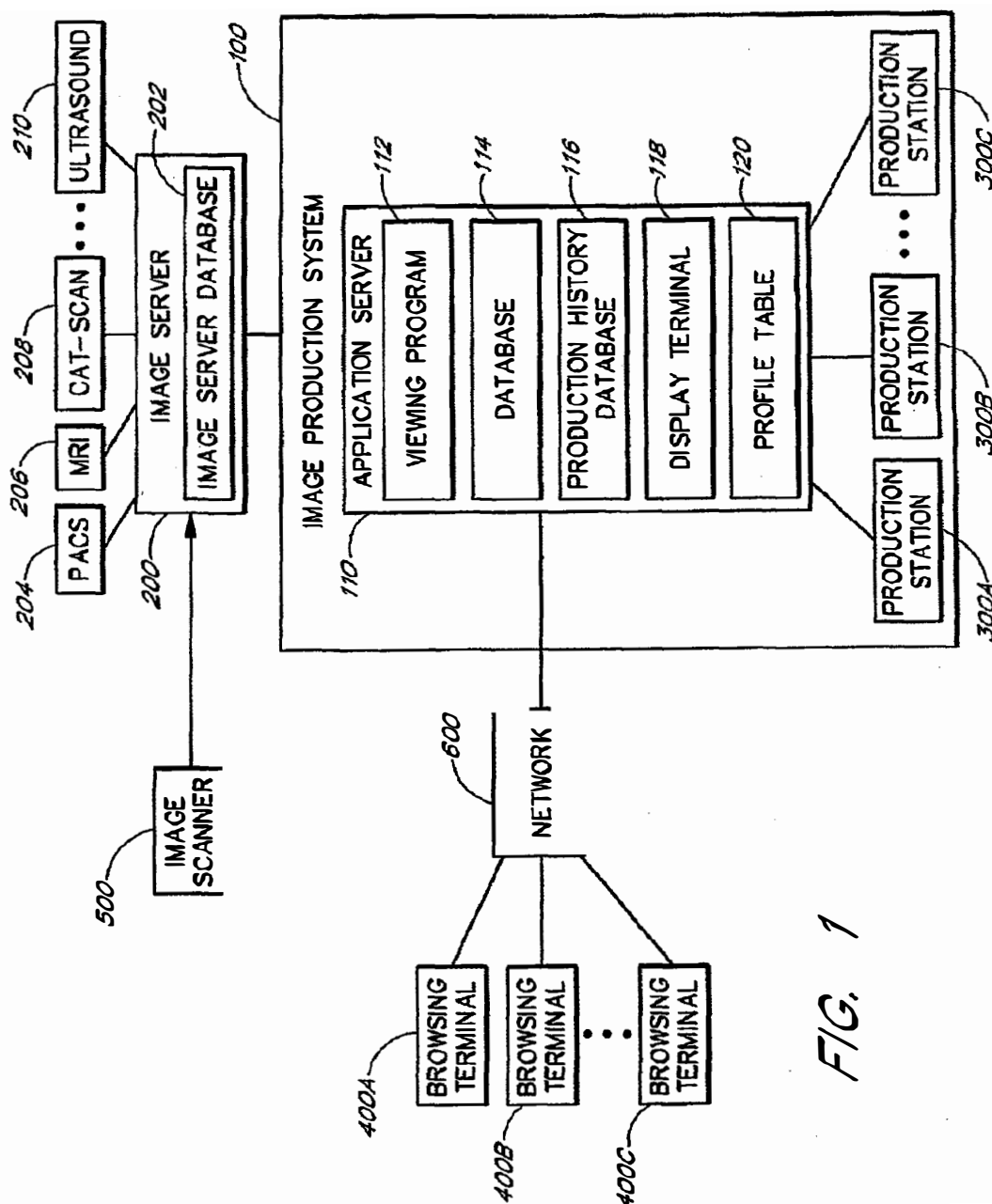


FIG. 1



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250		252		254
IMAGE INPUT DEVICES	FIELDS	AUTO-PRODUCE 1	TARGET PRODUCTION STATION	RELATED DATA STORAGE
MRI MACHINE I		YES	PRODUCTION STATION A	PACS 1
		NO		
ULTRASOUND MACHINE I		YES	PRODUCTION STATION B	PACS 1, PACS 2

FIG. 2



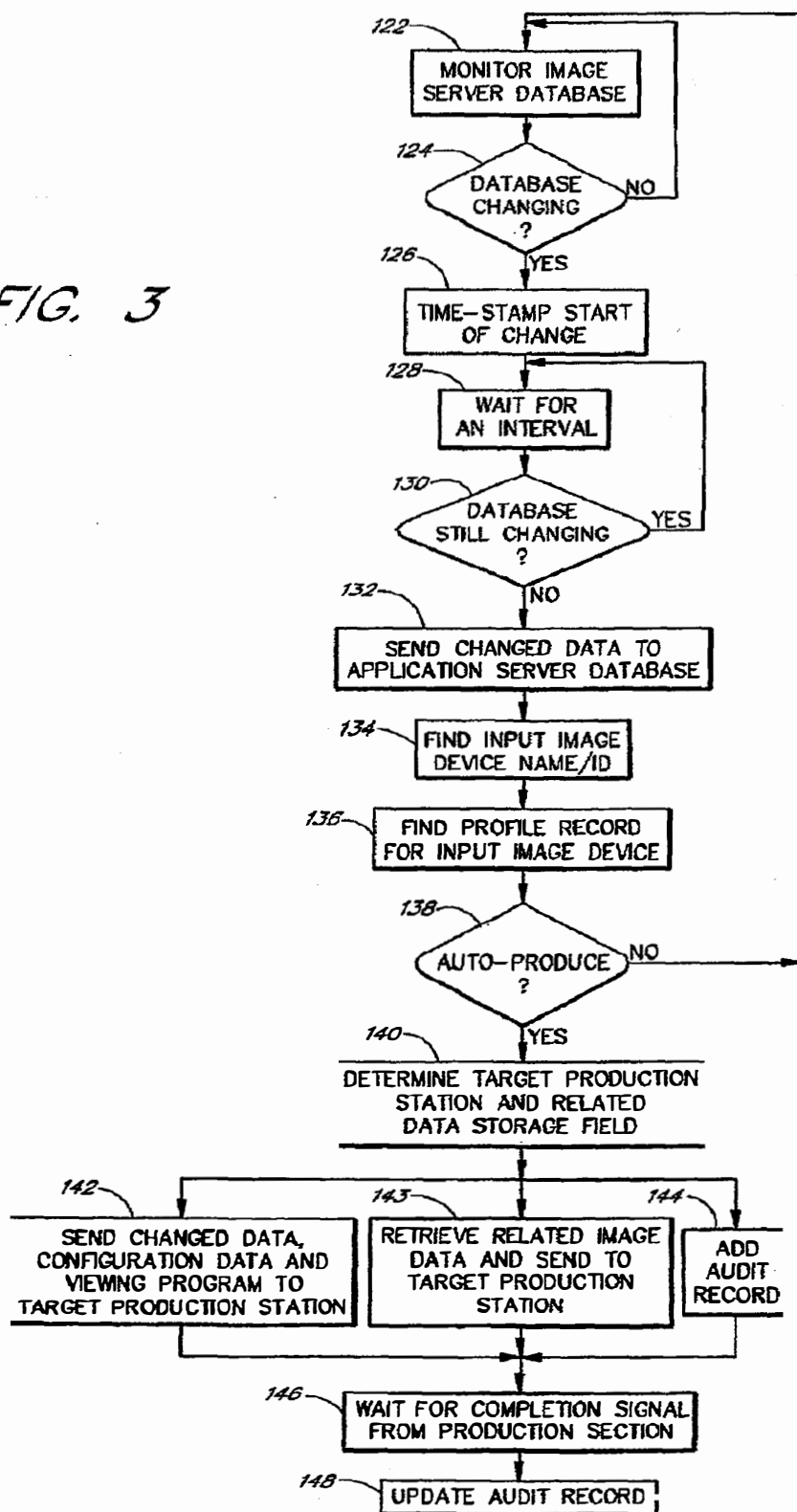
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FIG. 3





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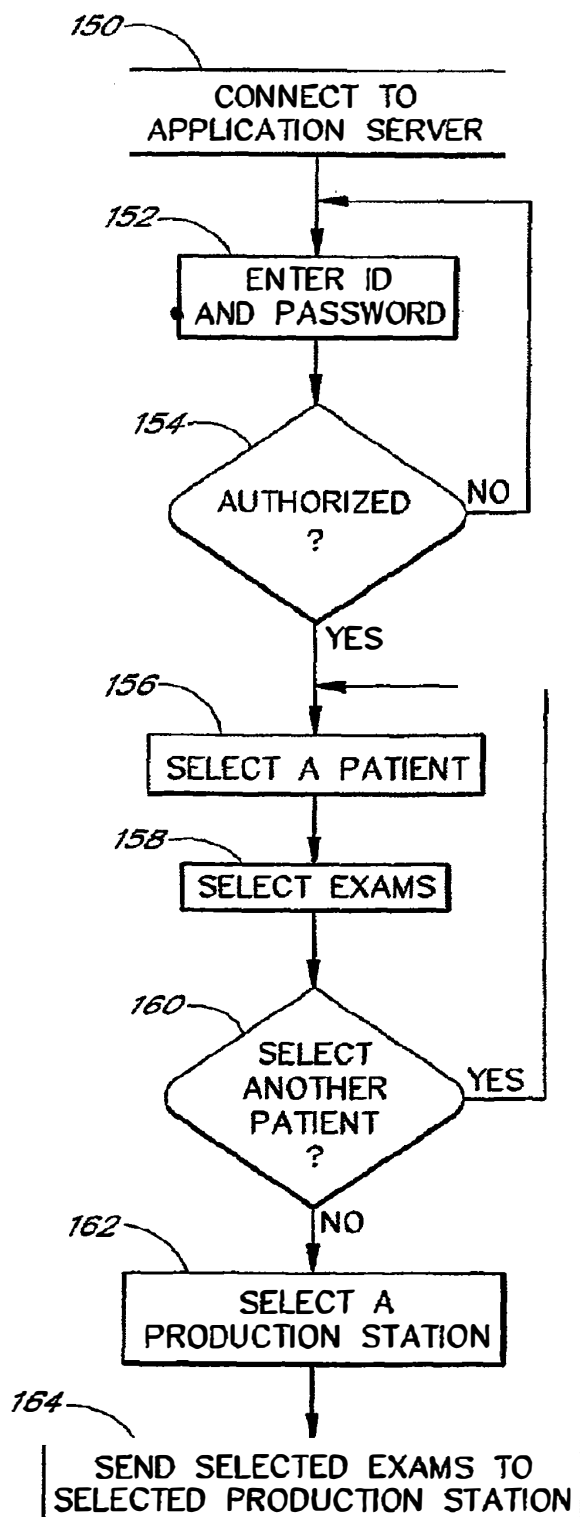


FIG. 4







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## SYSTEM AND METHOD FOR PRODUCING MEDICAL IMAGE DATA ONTO PORTABLE DIGITAL RECORDING MEDIA

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 11/942,630, filed on Nov. 19, 2007, which is a continuation of U.S. patent application Ser. No. 09/761,795, filed on Jan. 17, 2001, now U.S. Pat. No. 7,302,164, issued Nov. 27, 2007. The entire disclosure of these priority applications are hereby incorporated by reference herein in their entirety.

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

This invention relates to a system and method for the production of medical image data on portable digital recording media such as compact discs. More particularly, it relates to a system and method for receiving medical image data, processing medical image data, and transmitting medical image data to be recorded on a portable digital recording medium.

## 2. Description of the Related Art

Since the invention of the x-ray film, film has been the predominant multipurpose medium for the acquisition, storage, and distribution of medical images. However, the storage and distribution of film often requires considerable expenses in labor and storage space.

Today's modern hospitals utilize computer-aided imaging devices such as Computed Tomography (CT), Digital Subtracted Angiography, and Magnetic Resonance Imaging (MRI). These digital devices can generate hundreds of images in a matter of seconds. Many hospitals require these images to be printed on film for storage and distribution. To print complete sets of medical images from these digital devices, the cost in film material, storage space, and management efforts is often very high.

Some radiology departments have installed digital image storage and management systems known as PACS (Picture Archive Communication Systems). PACS are capable of storing a large amount of medical image data in digital form. PACS are made by manufacturers including GE, Siemens, and Fuji.

To ease the communication of data, the DICOM (Digital Imaging and Communications in Medicine) standard was developed by ACR-NEMA (American College of Radiology-National Electrical Manufacturer's Association) for communication between medical imaging devices and PACS. In addition to the examined images, patient demographics, and exam information such as patient name, patient age, exam number, exam modality, exam machine name, and exam date can also be stored and retrieved in DICOM compatible data format. A DICOM file stores patient and exam information in the header of the file, followed by the exam images. PACS store medical image data in DICOM format.

Digital medical image data can be stored on PACS and distributed using the Internet. However, many physicians' offices do not have the bandwidth suitable for fast download of medical image data. The concerns for medical data privacy and Internet security further reduce the desirability of Internet distribution.

## SUMMARY OF THE INVENTION

The claimed system allows for digital medical image data to be produced on a portable digital recording medium such as

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a CD. A CD containing the medical image data can be distributed to physicians, hospitals, patients, insurance companies, etc. One embodiment of the claimed system allows for medical image data to be placed on a CD along with a viewing program, so that a user can use any computer compatible with the CD to view the medical image data on the CD. One embodiment of the claimed system allows for searching medical exam data that are related and placing such data on the same CD.

One embodiment of the claimed system comprises a receiving module configured to receive medical image data, a processing module configured to process the received medical image data, and an output module configured to transmit the processed medical image data to a production station configured to produce the transmitted medical image data on portable digital recording medium, such as a CD. In one embodiment, the output module transmits a viewing program configured to view medical image data to the production station so that the viewing program is produced on the same CD as the medical image data. In another embodiment, the CD already contains the viewing program before the medical image data is transmitted to the CD production station.

In one embodiment of the claimed system, the processing module is configured to create and store audit information of the portable digital recording medium produced by the production station.

In another embodiment of the claimed system, the processing module is configured to identify the originating image input device of the received medical image data, and determine, on the basis of the originating image input device, whether to transmit the received medical image data to a production station. The processing module also selects, on the basis of the originating image input device, one of multiple production stations as the target production station.

Yet another embodiment of the claimed system is configured to retrieve medical image data that are related to the received medical image data, and transmit the retrieved related image data to the production station. In one embodiment, exam images of the same patient are considered related. In another embodiment, exam images of the same patient and the same modality are considered related. For example, two x-ray exams on the left hand of the same patient are considered related. In yet another embodiment, exam images of the same patient, the same modality and taken within a specified date range are considered related. For example, two x-ray exams on the left hand of the same patient taken within a two-month period are considered related. A hospital may also determine other scenarios of relatedness.

One claimed method comprises the steps of connecting a browsing terminal to a computer database configured to store medical image data, selecting medical image data from medical image data stored on the database, and recording the selected medical image data on portable digital recording medium. In one embodiment, the claimed method also comprises a step of recording a viewing program configured to view medical image data on the portable digital recording medium.

One embodiment of the claimed method further comprises the steps of finding and retrieving medical image data that are related to the selected medical image data, and recording related image data to portable digital recording medium.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates one embodiment of an image production system comprising an application server and portable digital recording medium production stations.



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FIG. 2 illustrates sample records of one embodiment of an image input device profile table.

FIG. 3 illustrates a process of receiving image data from image server, processing received image data, and transmitting such data to the production station. This process also retrieves and transmits related image data for production.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server, with the option of selecting and ordering the production of related image data.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates one embodiment of an image production system 100 comprising an application server 110 and one or more portable digital recording medium production stations 300A, 300B and 300C. In the preferred embodiment, the production stations 300A, 300B and 300C are CD (Compact Disc) production stations. Digital portable recording medium comprises CDs and DVDs (Digital Versatile Disc or Digital Video Disc). CDs may comprise CD-ROM (Compact Disc Read Only Memory), CD-R (Compact Disc Recordable), and CD-RW (Compact Disc Recordable and Writable). DVDs may comprise DVD-ROM (DVD Read Only Memory), DVD-R (DVD Recordable) and DVD-RAM (a standard for DVDs that can be read and written many times). Thus, although the following description refers primarily to CDs, those of ordinary skill in the art will understand that any suitable portable digital recording medium can be substituted for CDs.

The application server 110 is connected to one or more physician browsing terminals 400A, 400B and 400C through a computer network 600. Each physician browsing terminal 400A, 400B or 400C comprises a browsing program such as Internet Explorer or Netscape Communicator. Physicians or their assistants launch the browsing program to access the application server 110 through the network 600 in order to select medical image data stored on the application server database 114 to be produced by a production station 300A, 300B or 300C. In the preferred embodiment, the physician browsing terminals 400A, 400B and 400C are connected to the application server through an Intranet. One embodiment of the Intranet utilizes TCP/IP network protocol. The Intranet can connect one radiology department, multiple departments within a hospital, or multiple hospitals. In another embodiment the browsing terminals 400A, 400B and 400C are connected to the application server 110 through the Internet.

Still referring to FIG. 1, the application server 110 is also connected to an image server 200. The image server 200 is further connected to image input devices such as PACS 204, MRI machines 206, CT-scan machines 208, ultrasound machines 210, etc. In the preferred embodiment, the image server 200 is a DICOM image server configured to receive and store medical image data in DICOM format. In operation, the image server 200 receives medical image data from image input devices such as PACS 204, MRI machines 206, CT-scan machines 208 and ultrasound machines 210 and stores such image data in the image server database 202. A high-resolution image scanner 500 is also connected to the image server 200, so that medical image data stored on film can be scanned on the image scanner 500, transmitted to the image server 200 and stored in the image server database 202. In one embodiment, the image scanner 500 also converts the scanned image to DICOM format. The application server 110 receives input

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image data from the image server database 202, processes the received image data, and sends the image data to one of the production stations 300A, 300B or 300C to produce CDs.

The application server 110 comprises a viewing program 112, an application server database 114 that stores image data received from the image server 200, a production history database 116 that stores audit records on each CD produced, a display terminal 118 for programming and operating the application server 110 by a programmer or physician, and an image input device profile table 120.

Still referring to FIG. 1, the viewing program 112 is configured to allow users to read and manipulate medical image data. The viewing program 112 comprises multiple image manipulation functions, such as rotating images, zooming in and zooming out, measuring the distance between two points, etc. The viewing program 112 also allows users to read the patient demographics and exam information associated with the image data. The viewing program 112 used in the preferred embodiment is produced by eFilm Medical Inc. located in Toronto, Canada. The viewing program 112 used in the preferred embodiment is an abbreviated version with fewer functions and takes less storage space, in order to maximize the storage space for image data on a CD. The image server 200 used in the preferred embodiment is also made by eFilm Medical Inc.

The CD production stations 300A, 300B and 300C in the preferred embodiment are produced by Rimage Corporation in Edina, Minn. Details about the Rimage CD production stations can be found in U.S. Pat. Nos. 5,542,768, 5,734,629, 5,914,918, 5,946,276, and 6,041,703, which are incorporated herein by reference in their entirety.

The application server 110 in the preferred embodiment runs on a personal computer running a 400 MHz Celeron or Pentium II/III chip, with Windows 98 or NT as the operating system.

FIG. 2 illustrates sample records of one embodiment of an image input device profile table 120. The image input device profile table 120 contains a profile record for each image input device. Each image input device's profile record comprises: (1) an "auto-produce" logical field 250 indicating whether medical image data from this image input device should be produced on CD automatically by the image production system 100, (2) a "target production station" field 252 identifying one of the production stations 300A, 300B or 300C on which medical image data is to be produced, and (3) a "related data storage" 254 field identifying the medical image data storage units in which to search for the related image data. A medical image data storage unit is a storage unit that stores medical image data and is connected to the application server 110. In one embodiment, a medical image data storage unit is connected to the application server 110 through the image server 200. In the preferred embodiment, PACS 204 is such a medical image data storage unit.

In FIG. 2, the sample profile table 120 contains profile records for MRI Machine I, MRI Machine II, and Ultrasound Machine I. For MRI Machine I, the “auto-produce” field 250 contains a “yes” value, directing the image production system 100 to automatically produce image data originating from MRI Machine I on portable digital recording medium. Its “target production station” field 252 contains a “Production Station A” value, directing the image production system 100 to produce image data originating from MRI Machine I on production station A. Its “related data storage” field 254 is “PACS I”, directing the image production system 100 to retrieve related medical image data from PACS I. For MRI Machine II, the “auto-produce” field 250 is “no”, directing the image production system 100 to not automatically pro-



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duce image data originating from MRI Machine II on portable digital recording medium. Since image data from MRI Machine II will not be automatically produced, the "target production station" field **252** and the "related data storage" field **254** are irrelevant. For Ultrasound Machine I, the "auto-produce" field **250** is "yes", and its "target production" field **252** is "Production Station B". Its "related data storage" field **254** contains a value of "PACS I, PACS II", directing the image production system **100** to search PACS I and PACS II for related medical image data.

FIG. 3 illustrates a process of the application server 110 receiving image data from the image server 200, processing the received image data, and transmitting such data to the production station 300A, 300B or 300C. The application server 110 continuously monitors the image server database 202 in step 122. In one embodiment, the application server continuously “pings” the network address corresponding to the image server 200 on the network that connects the application server 110 with the image server 200.

Still referring to FIG. 3, the application server 110 determines if the image server database 202 is changing, in step 124. In the preferred embodiment, the application server 110 makes that determination by detecting whether the image server database 202 is increasing in size. If there is no change in the image server database 202, then the application server 110 returns to step 122 to continue monitoring. If there is change in the image server database 202, then the application server 110 proceeds to step 126 and time-stamps the moment that the change started. The application server 110 then proceeds to step 128 and waits for an interval, typically 35 to 65 seconds. After the interval, the application server 110 checks whether the image server database 202 is still changing, in step 130. If the image server database 202 is still changing then the application server 110 returns to step 128 to wait for another interval. If the image server database 202 is no longer changing, then the application server 110 proceeds to step 132 and copies the data changed since the time-stamped moment. This changed data is copied from the image server database 202 to the application server database 114.

The application server 110 proceeds to step 134 and finds the input image device name or identification number from the newly received image data. In the preferred embodiment, image data from the image server database 202 are stored in DICOM format, and the input image device name or identification number is stored in the header of the DICOM format image data file. The input image device name/ID indicates the origin of the newly received data. The application server 110 proceeds to step 136 and uses the found input image device name/ID to find a corresponding profile record in the image input device profile table 120. If the profile record has an “auto-produce” field 250 with a “no” value, the application server 110 returns from step 138 to step 122 to continue monitoring the image server database 202. If the “auto-produce” field 250 contains a “yes” value, the application server 110 proceeds from step 138 to step 140, and determines the target production station 300A, 300B or 300C from the “target production station” field 252 of the profile record. In step 140, the application server 110 also determines the value in the “related data storage” field 254 of the profile record.

Still referring to FIG. 3, in step 142, the application server 110 sends a copy of the newly received data, along with a copy of the viewing program 112, to the target production station 300A, 300B or 300C identified in step 140. With the viewing program attached, the image data on each CD produced by the target production station 300A, 300B or 300C can be viewed on any computer that accepts the CD, regardless of whether that computer has its own viewing program.

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installed. In one embodiment, the data received in step 132 is stored in the application server database 114 before it is transmitted to the target production station 300A, 300B or 300C in step 142. In another embodiment, the application server 110 transmits the data received in step 132 to the target production station 300A, 300B or 300C, without storing a copy of the data in the application server database 114.

In one embodiment, the application server 110 does not send a copy of the viewing program 112 to the target production station during step 142. Rather, the application server 110 sends a copy of the received medical image data to the production station 300A, 300B or 300C to be recorded on pre-burned CDs. Each pre-burned CD contains a viewing program already recorded onto the CD before step 142.

In step 142, the application server 110 also sends configuration data to the target production station 300A, 300B or 300C. The configuration data comprises a label-printing file comprising the specification for printing labels on top of the CDs, and a "number of copies" value indicating the number of copies of CDs to be produced. A typical specification in the label-printing file may specify information such as patient name, exam modality, hospital name, physician name, production date, etc. to be printed by the target production station as a label on the top of each CD produced.

Still referring to FIG. 3, in step 143, the application server 110 searches the application server database 114 for image data related to the newly received data. The application server 110 then searches the PACS systems identified in the “related data storage” field 254 in step 140 for data related to the newly received data. Some PACS systems each comprise a primary image data storage and an archive image data storage, and the application server 110 searches both the primary image data storage and the archive image data storage on these PACS systems. The application server 110 is connected to the PACS systems through the image server 200. The application server 110 retrieves found related data from the PACS systems and stores a copy of such found related data in the application server database 114. The application server 110 sends a copy of related data that are found from the application server database 114 or the PACS systems to the target production station 300A, 300B or 300C. The medical image data originally received in step 132 and the related medical image data are produced by the target production station 300A, 300B or 300C on the same CDs for comparative study.

For each CD to be produced, the application server 110 adds one audit record to the production history database 116 in step 144. The new audit record comprises the identification number of the CD and other relevant information about the CD, such as the physician who requested the production (if any), and the names of the patients whose exam images are on that CD.

Steps 142, 143 and 144 may be executed immediately before, concurrent with, or immediately after one another.

The target production station 300A, 300B or 300C produces the CDs containing the medical image data and the viewing program sent to it, and prints a label on top of every CD, corresponding to the specification in the label-printing file. The number of CDs produced corresponds to the “number of copies” number sent by the application server 110 in step 142. When the target production station has produced the CDs, the production station returns a “completed” signal to the application server 110. The application server 110 waits for this signal in step 146.

Still referring to FIG. 3, in step 148, the application server 110 updates the audit records in the production history database 116 that were created in step 144. For each CD produced, the application 110 server updates the date and time of pro-



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duction for that CD's audit record. The application server **110** also updates the status value for that CD's audit storage record from "processing" to "successful". The application server **110** then continues monitoring the image server database **202** as in step **122**.

FIG. 4 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110. A user, typically a physician or physician's assistant, accesses the application server database 114 from a browsing terminal 400A, 400B or 400C connected to a network 600. In one embodiment, the user launches a browser such as Microsoft Internet Explorer or Netscape Communicator, and specifies a network address corresponding to the application server 110, in step 150. In another embodiment, the user clicks a pre-defined icon that directly launches a browser connecting to the application server 110. The application server 110 prompts the user to enter a password or an identification name coupled with a password, in step 152. The application server 110 checks if the entered identification/password is authorized in step 154. If the entered identification/password is not authorized the user is returned to step 152 to re-enter the identification/password, or disconnected from the application server 110. If the entered identification/password is authorized then the user is allowed access to the application server database 114 and the application server 110 proceeds to step 156.

Still referring to FIG. 4, in step 156 the user is prompted to select a patient from a list of patients with exam images in the application server database 114. The user is then shown a list of the selected patient's exams, and is prompted to select one or more exams of that patient, in step 158. When the user indicates that he/she has completed selecting all exams for that patient, the user is asked in step 160 whether to select another patient from the list of patients. If the user answers "yes", the user is returned to step 156 to select another patient. If the user answers "no", the user proceeds to step 162.

In another embodiment, when a user selects a patient, all exams belonging to that patient will be automatically selected without prompting for user selection. In yet another embodiment, the user is not prompted to select patients, but is only prompted to select exams from a list of all exams for all patients contained in the application server database 114.

When the user indicates that he/she has completed selecting, the user is prompted to select a production station from a list of production stations 300A, 300B and 300C in step 162. The user is also prompted to enter additional label text to be printed as labels on the CDs to be produced, to supplement the text printed according to the specification of the label-printing file. The user can advantageously select the production station located closest to his/her office. In one embodiment, only one production station is connected to the application server 110, and the lone production station will be the selected production station without prompting for user selection.

In one embodiment, the user is also prompted to select the number of copies of CDs to be produced. In another embodiment, the number of copies is set at one without prompting for user direction. As described above in connection with FIG. 3, in step 164, the application server 110 sends a copy of the image data of the selected exams for the selected patients to the selected production station, along with a copy of the viewing program 112, and configuration data comprising a label-printing file, additional label text, and a number indicating the number of copies of CDs to be produced. The production station 300A, 300B or 300C then produces one or more CDs containing the selected exams for the selected patients and the viewing program, with labels printed on top

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of the CDs according to the specification in the label-printing file and the user-entered additional label text.

In another embodiment, a user accesses the application server database **114** not from a browsing terminal **400A**, **400B** or **400C**, but directly from the display terminal **118**. In this embodiment the user directly proceeds from step **152**. In this embodiment the user is typically a programmer or operator of the image production system **100**.

FIG. 5 illustrates a process of a user selecting and ordering the production of image data stored on the application server 110, with the additional option of selecting and ordering the production of related data for comparative study. As described above in connection with FIG. 4, a user connects to the application server 110 from a browsing terminal 400A, 400B or 400C in step 170. The user enters identification information and a password in step 172. Step 174 determines whether the user is authorized to access the application server database 114. If authorized, the user is prompted to select a patient in step 176, and selects exams of the selected patient in step 178. The user is then asked in step 180 if he/she desires to find related data of that patient for comparative study.

If the user answers yes, the application server 110 then searches for related data. The application server 110 finds the image input device profile table 120 profile record corresponding to the image input device from which the selected data originates, identifies the list of PACS systems stored in the “related data storage” field 254, and searches these PACS systems for related data. In another embodiment, once the user has selected a patient/exam combination, the application server 110 automatically searches for related data without asking for user direction. In this embodiment, the application server 110 alerts the user if related data are found. In one embodiment, the application server 110 also searches the application server database 114 for related medial image data.

Still referring to FIG. 5, the user is then prompted to select all or some of the related data from the list of found related data for production, in step 184. In another embodiment, all found related data are automatically selected by the application server 110 for production, without prompting for user selection.

The user is then prompted to select another patient in step 186. After the user has completed selecting all patients, the user is prompted to select a CD production station 300A, 300B or 300C in step 188. The user is also prompted to enter additional label text. In step 190, the application server 110 then sends a copy of the original and selected related data, along with a copy of the viewing program 112, a number indicating the number of copies to be produced, additional label text, and a label-printing file to the selected production station 300A, 300B or 300C for production.

The above paragraphs describe the application server **110** with one database **114** for image data storage. In another embodiment, the application server **110** includes two databases for image data storage: a new data database and a storage data database. The new data database stores only the most recent batch of new data just received from the image server **200**. After the data in the new data database is sent to a production station **300A**, **300B** or **300C**, the application server **110** erases data in the new data database. The storage data database stores all data that has ever been received from the image server database **202**. In the processes described by FIG. 4 and FIG. 5, a user selects images for production from the storage data database.

Several modules are described in the specification and the claims. The modules may advantageously be configured to reside on an addressable storage medium and configured to execute on one or more processors. The modules may



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include, but are not limited to, software or hardware components that perform certain tasks. Thus, a module may include, for example, object-oriented software components, class components, processes methods, functions, attributes, procedures, subroutines, segments of program code, drivers, firmware, microcode, circuitry, data, databases, data structures, tables, arrays, and variables. Modules may be integrated into a smaller number of modules. One module may also be separated into multiple modules.

Although the foregoing has been a description and illustration of specific embodiments of the invention, various modifications and changes can be made thereto by persons skilled in the art, without departing from the scope and spirit of the invention as defined by the following claims.

What is claimed is:

1. A method of automatically producing medical image data and related data on an optical storage medium upon expiration of a timeout period, the method comprising:

detecting whether a server has changed within a timeout period after receiving medical image data or related data from a modality and resetting the timeout period when the change is detected; and

automatically producing an optical storage medium comprising selected medical image data and related data from the server based on when the timeout period has expired and recording on the optical storage medium program code that, when executed, allows viewing of the selected medical image data, wherein the medical image data is formatted in a standard medical imaging format used by a computer configured for viewing the medical image data.

2. The method of claim 1, further comprising producing a label corresponding to the selected medical image data.

3. The method of claim 1, wherein automatically producing comprises automatically producing a portable optical storage medium that is labeled.

4. The method of claim 1, wherein detecting whether the server has changed comprises detecting whether a database coupled to the server has increased in size since the beginning of the timeout period.

5. The method of claim 1, further comprising periodically checking a status of the server.

6. The method of claim 1, wherein the timeout period is configurable.

10

7. The method of claim 1, wherein the timeout period expires after about 35 seconds, thereby causing the production station to automatically produce the optical storage medium.

8. A system for automatically producing medical images on an optical storage medium, the system comprising:

a database configured to receive one or more medical images from at least one modality;

an application server coupled to the database and configured to create a timestamp when the application server detects a change in the database, thereby initiating a timer,

wherein the timer resets when the application server detects an additional change in the database before a timeout interval, measured from the timestamp, elapses; and

wherein the timer times out when the application server detects no additional change in the database after the timeout interval, measured from the timestamp, elapses; and

a production station coupled to the application server and configured to automatically produce an optical storage medium comprising one or more selected medical images from the database based on when the timer times out, wherein the medical image data is formatted in a standard medical imaging format used by a computer configured for viewing the medical image data.

9. The system of claim 8, wherein the production station comprises a printer configured to produce a label corresponding to the selected medical image data.

10. The system of claim 8, wherein the production station produces a portable optical storage medium that is labeled.

11. The system of claim 8, wherein the application server is configured to detect whether the database has increased in size within the timeout interval, measured from the timestamp.

12. The system of claim 8, wherein the application server is configured to periodically check a status of the database.

13. The system of claim 8, wherein the timeout interval is configurable.

14. The system of claim 8, wherein the timer times out after about 35 seconds, thereby causing the production station to automatically produce the optical storage medium.

\* \* \* \* \*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

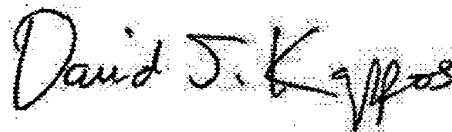
PATENT NO. : 7,801,422 B2  
APPLICATION NO. : 12/479726  
DATED : September 21, 2010  
INVENTOR(S) : Wright et al.

Page 1 of 6

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- In Column 1 (Item 56, Page 3), Line 48, under Other Publications, change "el," to --al,--.
- In Column 1 (Item 56, Page 3), Line 60, under Other Publications, change "1998" to --1996--.
- In Column 2 (Item 56, Page 3), Line 34, under Other Publications, change "CT/MR" to --CT/MRI--.
- In Column 2 (Item 56, Page 3), Line 59, under Other Publications, change "interact," to --internet,--.
- In Column 1 (Item 56, Page 4), Line 8, under Other Publications, change "Johnston." to --Johnston,--.
- In Column 1 (Item 56, Page 4), Line 8, under Other Publications, change "377-434;" to --377-434;--.
- In Column 1 (Item 56, Page 4), Line 20, under Other Publications, change "649652." to --649-652,--.
- In Column 1 (Item 56, Page 5), Line 1, under Other Publications, change "interne" to --internet--.
- In Column 1 (Item 56, Page 5), Line 35, under Other Publications, change "USCF" to --UCSF--.
- In Column 1 (Item 56, Page 5), Line 37, under Other Publications, change "USCF" to --UCSF--.
- In Column 2 (Item 56, Page 5), Line 8, under Other Publications, change "COMPTERSYSTEME" to --COMPUTERSYSTEME--.
- In Column 2 (Item 56, Page 5), Line 36, under Other Publications, change "aboutimain.htm," to --about/main.htm,--.

Signed and Sealed this  
Twenty-second Day of March, 2011



David J. Kappos  
Director of the United States Patent and Trademark Office



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,801,422 B2**

Page 2 of 6

In Column 1 (Item 56, Page 6), Line 3, under Other Publications, change "DocId" to --DocId--.

In Column 1 (Item 56, Page 6), Line 7, under Other Publications, change "2000.01" to --2000-01--.

In Column 1 (Item 56, Page 6), Line 22, under Other Publications, change "DocId" to --DocId--.

In Column 1 (Item 56, Page 6), Line 24, under Other Publications, change "4+" to --4×--.

In Column 1 (Item 56, Page 6), Line 43, under Other Publications, change "articies" to --articles--.

In Column 1 (Item 56, Page 6), Line 46, under Other Publications, change "redOrbitcom," to --redOrbit.com,--.

In Column 1 (Item 56, Page 6), Line 54, under Other Publications, change "MedImage" to --MedImage--.

In Column 2 (Item 56, Page 6), Line 14, under Other Publications, change "Compentencies," to --Competencies,--.

In Column 2 (Item 56, Page 6), Line 43, under Other Publications, change "Networks" to --Network--.

In Column 2 (Item 56, Page 6), Line 54, under Other Publications, change "at al.," to --et al.,--.

In Column 2 (Item 56, Page 6), Line 63-64, under Other Publications, change "Communication" to --Communications--.

In Column 2 (Item 56, Page 6), Line 71, under Other Publications, change "articies" to --articles--.

In Column 1 (Item 56, Page 7), Line 61, under Other Publications, before "Computerized" insert --A--.

In Column 1 (Item 56, Page 7), Line 66, under Other Publications, change "HIPPA" to --HIPAA--.

In Column 1 (Item 56, Page 7), Line 67, under Other Publications, change "CRD-PC" to --CRS-PC--.

In Column 2 (Item 56, Page 7), Line 1, under Other Publications, change "at al.," to --et al.,--.

In Column 2 (Item 56, Page 7), Line 24, under Other Publications, change "at al.," to --et al.,--.

In Column 2 (Item 56, Page 7), Line 34, under Other Publications, change "1998" to --1996--.

In Column 2 (Item 56, Page 7), Line 42, under Other Publications, change "Sta Pendine" to --Stay Pending--.



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,801,422 B2**

Page 3 of 6

In Column 2 (Item 56, Page 7), Line 69, under Other Publications, change “Doman” to  
 --Domain--.

In Column 2 (Item 56, Page 8), Line 4, under Other Publications, change “Itemld” to  
 --ItemId--.

In Column 2 (Item 56, Page 8), Line 9, under Other Publications, change “stoty” to --story--.

In Column 1 (Item 56, Page 9), Line 23, under Other Publications before “Advanced” insert  
 --Announces--.

In Column 2 (Item 56, Page 9), Line 14, under Other Publications, change “Iritroduces” to  
 --Introduces--.

In Column 2 (Item 56, Page 9), Line 61, under Other Publications, change “Managment” to  
 --Management--.

In Column 2 (Item 56, Page 9), Line 68, under Other Publications, change “at al.” to --et al.,--.

In Column 1 (Item 56, Page 10), Line 46, under Other Publications, change “Mar. 1, 2000-03”  
 to --Mar. 1, 2000--.

In Column 2 (Item 56, Page 10), Line 12, under Other Publications, change  
 “EchoCardiography: Heart,” to --EchoCardiography” Heart, 78,--.

In Column 2 (Item 56, Page 10), Line 28, under Other Publications, change “at al.” to  
 --et al.,--.

In Column 2 (Item 56, Page 10), Line 32, under Other Publications, change “Exhbition.” to  
 --Exhibition.--.

In Column 2 (Item 56, Page 10), Line 33, under Other Publications, before “Development”  
 delete “Institute,”.

In Column 2 (Item 56, Page 10), Line 34, under Other Publications, change “Insitute,” to  
 --Institute,”--.

In Column 2 (Item 56, Page 10), Line 36, under Other Publications, change “2/73,” to  
 --2/573,--.

In Column 2 (Item 56, Page 10), Line 42, under Other Publications, change “at al.” to  
 --et al.,--.

In Column 1 (Item 56, Page 11), Line 36, under Other Publications, change “”Medlimage” to  
 --“Medimage--.

In Column 1 (Item 56, Page 11), Line 44, under Other Publications, change “Description” to  
 --Description--.

In Column 1 (Item 56, Page 11), Line 44, under Other Publications, change “Mitre” to  
 --Mitra--.



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 7,801,422 B2**

Page 4 of 6

In Column 1 (Item 56, Page 11), Line 68, under Other Publications, change “at al,” to  
--et al.--.

In Column 2 (Item 56, Page 11), Line 50, under Other Publications, change “Solution,” to  
--Solutions--.

In Column 2 (Item 56, Page 11), Line 50, under Other Publications, change “Metal” to  
--Meta--.

In Column 2 (Item 56, Page 11), Line 52, under Other Publications, change “Annual” to  
--Annual--.

In Column 2 (Item 56, Page 11), Line 56, under Other Publications, change ““Structure” to  
--“Structured--.

In Column 1 (Item 56, Page 12), Line 19, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 22, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 28, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 32, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 33, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 35, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 37, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 1 (Item 56, Page 12), Line 67, under Other Publications, change “Mitre” to  
--Mitra--.

In Column 2 (Item 56, Page 12), Line 4, under Other Publications, change “Jan. 1,” to  
--Jan. 6--.

In Column 2 (Item 56, Page 12), Line 6, under Other Publications, change “Mita” to --Mitra--.

In Column 2 (Item 56, Page 12), Line 23, under Other Publications, change “Summ’y,” to  
--Summary--.

In Column 2 (Item 56, Page 12), Line 60, under Other Publications, change “PerfectImage” to  
--PerfectImage--.



**CERTIFICATE OF CORRECTION (continued)**

Page 5 of 6

**U.S. Pat. No. 7,801,422 B2**

In Column 2 (Item 56, Page 12), Line 68, under Other Publications, change “DICOA” to --DICOM--.

In Column 1 (Item 56, Page 13), Line 23, under Other Publications, change “00083” to --00063--.

In Column 1 (Item 56, Page 13), Line 48, under Other Publications, change “Mitre” to --Mitra--.

In Column 1 (Item 56, Page 14), Line 44, under Other Publications, change “CT/MR” to --CT/MRI--.

In Column 1 (Item 56, Page 14), Line 55, under Other Publications, change “Raclin” to --Radin--.

In Column 1 (Item 56, Page 15), Line 16, under Other Publications, change “Akquisltion” to --Akquisition--.

In Column 1 (Item 56, Page 15), Line 19, under Other Publications, before “Vepro” delete “935”.

In Column 1 (Item 56, Page 15), Line 19, under Other Publications, change “Cardlo” to --Cardio--.

In Column 1 (Item 56, Page 15), Line 21, under Other Publications, change “MedlImage” to --Medimage--.

In Column 1 (Item 56, Page 15), Line 24, under Other Publications, change “UniversitatsIdinik” to --Universitatsklinik--.

In Column 1 (Item 56, Page 15), Line 24, under Other Publications, after “153,” insert --69120, dated Jan. 30, 2009.--.

In Column 1 (Item 56, Page 15), Line 25, under Other Publications, change “Lefter” to --Letter--.

In Column 1 (Item 56, Page 15), Line 31, under Other Publications, change “Advertist” to --Adventist--.

In Column 2 (Item 56, Page 15), Line 3, under Other Publications, change “Sep3.” to --Sept.--.

In Column 2 (Item 56, Page 15), Line 11, under Other Publications, change “Plug ‘n.” to --Plug ‘n--.

In Column 2 (Item 56, Page 15), Line 32, under Other Publications, change “Commerical” to - Commercial--.



**CERTIFICATE OF CORRECTION (continued)**

Page 6 of 6

**U.S. Pat. No. 7,801,422 B2**

In Column 2 (Page 2), Line 73, under U.S. Patent Documents, delete “2002/0138254 A1 9/2001 Isaka et al.” and insert --2002/0138524 A1 9/2002 Ingle et al.--.

In Column 1 (Page 12), Lines 24-25, delete “Mitra CD Writer Development & Quality Plan Rev. 1.0, dated May 28, 1996.”

In Column 2 (Page 15), after Line 41, add the following references

“ROBERT BOWMAN, et al., “Building And Maintaining Today’s Networks,” 1996 Annual HIMSS Conference And Exhibition.

ROBERT COPPLE, PE, et al., “Developing a Methodology to Drive Patient Care Unit Consolidation,” 1996 Annual HIMSS Conference And Exhibition.

RONALD L. JOHNSON, “Trends In The Health Care Vendor Marketplace,” 1996 Annual HIMSS Conference And Exhibition.”, thereto.



1 Craig S. Summers (SBN 108,688)  
2 craig.summers@kmob.com  
3 Paul A. Stewart (SBN 153,467)  
4 paul.stewart@kmob.com  
5 David H. Chan (SBN 251,575)  
6 david.chan@kmob.com  
7 **KNOBBE, MARTENS, OLSON & BEAR, LLP**  
8 2040 Main Street, 14<sup>th</sup> Floor  
9 Irvine, CA 92614  
10 Telephone: (949) 760-0404  
11 Facsimile: (949) 760-9502

12 Attorneys for Plaintiff  
13 **DATCARD SYSTEMS, INC.**

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IN THE UNITED STATES DISTRICT COURT  
FOR THE CENTRAL DISTRICT OF CALIFORNIA  
SOUTHERN DIVISION

DATCARD SYSTEMS, INC., a  
California corporation,

Plaintiff,

v.

PACSGEAR, INC., a California  
corporation,

Defendant.

Civil Action No.  
SACV10-1288 DOC (VBKx)

**SECOND AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT**

**DEMAND FOR JURY TRIAL**

FILED  
2011 FEB 15 AM 10:42  
CLERK U.S. DISTRICT COURT  
CENTRAL DIST. OF CALIF.  
SANTA ANA



1 Plaintiff DatCard Systems, Inc. ("DatCard"), for its First Amended  
2 Complaint against Defendant PacsGear, Inc. ("PacsGear"), alleges as follows:

3 **PARTIES**

4 1. Plaintiff DatCard is a California corporation having a principal  
5 place of business at 7 Goodyear, Irvine, California 92618.

6 2. Upon information and belief, Defendant PacsGear, Inc. is a  
7 corporation organized and existing under the laws of the state of California,  
8 having a principal place of business at 7020 Koll Center Parkway, Suite 100,  
9 Pleasanton, California 94566.

10 **JURISDICTION AND VENUE**

11 3. This action arises under the Patent Laws of the United States, 35  
12 U.S.C. §§ 100, *et seq.*

13 4. This Court has subject matter jurisdiction pursuant to 28 U.S.C.  
14 §§ 1331 and 1338(a).

15 5. Upon information and belief, PacsGear conducts business  
16 throughout the United States, including in this Judicial District, and has  
17 committed the acts complained of in this Judicial District and elsewhere.

18 6. Venue is proper in this Judicial District pursuant to 28 U.S.C.  
19 § 1391(b), (c) and 1400(b).

20 **FIRST CLAIM FOR RELIEF**

21 **INFRINGEMENT OF U.S. PATENT NO. 7,302,164**

22 7. Plaintiff incorporates by reference and realleges each of the  
23 allegations set forth in Paragraphs 1-6 above.

24 8. On November 27, 2007, U.S. Patent No. 7,302,164 ("the '164  
25 Patent"), entitled "System and Method for Producing Medical Image Data Onto  
26 Portable Digital Recording Media," was duly and legally issued by the United  
27 States Patent and Trademark Office. DatCard is the owner of all right and title,  
28 both legal and equitable, to the '164 Patent, and has been the owner of the '164



1 Patent since the date of its issuance. A copy of the '164 Patent is attached  
2 hereto as Exhibit 1.

3 9. PacsGear has directly infringed the '164 Patent at least through its  
4 manufacture, sale, offer for sale and use of its medical disc publishing products,  
5 including the MediaWriter product.

6 10. In addition, PacsGear has contributed to infringement of the '164  
7 Patent by others, and induced infringement of the '164 Patent by others, through  
8 its activities relating to its medical disc publishing products, including the  
9 MediaWriter product.

10 11. PacsGear's acts of infringement have caused damage to DatCard in  
11 an amount to be determined at trial.

12 12. PacsGear's infringement of the '164 Patent is causing irreparable  
13 harm to DatCard, for which there is no adequate remedy at law. PacsGear's  
14 infringement will continue, and will continue to cause irreparable harm to  
15 DatCard, unless PacsGear's infringement is enjoined by this Court.

16 13. DatCard is informed and believes that PacsGear's infringement of  
17 the '164 Patent was and is willful and deliberate, entitling DatCard to enhanced  
18 damages under 35 U.S.C. § 284 and attorneys' fees and non-taxable costs under  
19 35 U.S.C. § 285.

20 **SECOND CLAIM FOR RELIEF**

21 **INFRINGEMENT OF U.S. PATENT NO. 7,729,597**

22 14. Plaintiff incorporates by reference and realleges each of the  
23 allegations set forth in Paragraphs 1-6 above.

24 15. On June 1, 2010, U.S. Patent No. 7,729,597 ("the '597 Patent"),  
25 entitled "System and Method for Producing Medical Image Data Onto Portable  
26 Digital Recording Media," was duly and legally issued by the United States  
27 Patent and Trademark Office. DatCard is the owner of all right and title, both  
28 legal and equitable, to the '597 Patent, and has been the owner of the '597



19. PacsGear's infringement of the '597 Patent is causing irreparable harm to DatCard, for which there is no adequate remedy at law. PacsGear's infringement will continue, and will continue to cause irreparable harm to DatCard, unless PacsGear's infringement is enjoined by this Court.

**INFRINGEMENT OF U.S. PATENT NO. 7,783,174**

21. On August 24, 2010, U.S. Patent No. 7,783,174 (“the ‘174 Patent”), entitled “System and Method for Producing Medical Image Data Onto Portable Digital Recording Media,” was duly and legally issued by the United States Patent and Trademark Office. DatCard is the owner of all right and title, both legal and equitable, to the ‘174 Patent, and has been the owner of the ‘174 Patent since the date of its issuance. A copy of the ‘174 Patent is attached hereto as Exhibit 3.

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1       22.     PacsGear has directly infringed the '174 Patent at least through its  
2 manufacture, sale, offer for sale and use of its medical disc publishing products,  
3 including the MediaWriter product.

4       23.     In addition, PacsGear has contributed to infringement of the '174  
5 Patent by others, and induced infringement of the '174 Patent by others, through  
6 its activities relating to its medical disc publishing products, including the  
7 MediaWriter product.

8       24.     PacsGear's acts of infringement have caused damage to DatCard in  
9 an amount to be determined at trial.

10       25.     PacsGear's infringement of the '174 Patent is causing irreparable  
11 harm to DatCard, for which there is no adequate remedy at law. PacsGear's  
12 infringement will continue, and will continue to cause irreparable harm to  
13 DatCard, unless PacsGear's infringement is enjoined by this Court.

14                   **FOURTH CLAIM FOR RELIEF**

15                   **INFRINGEMENT OF U.S. PATENT NO. 7,734,157**

16       26.     Plaintiff incorporates by reference and realleges each of the  
17 allegations set forth in Paragraphs 1-6 above.

18       27.     On June 8, 2010, U.S. Patent No. 7,734,157 ("the '157 Patent"),  
19 entitled "System and Method for Producing Medical Image Data Onto Portable  
20 Digital Recording Media," was duly and legally issued by the United States  
21 Patent and Trademark Office. DatCard is the owner of all right and title, both  
22 legal and equitable, to the '157 Patent, and has been the owner of the '157  
23 Patent since the date of its issuance. A copy of the '157 Patent is attached  
24 hereto as Exhibit 4.

25       28.     PacsGear has directly infringed the '157 Patent at least through its  
26 manufacture, sale, offer for sale and use of its medical disc publishing products,  
27 including the MediaWriter product.

28     ///



1           29.     In addition, PacsGear has contributed to infringement of the '157  
2 Patent by others, and induced infringement of the '157 Patent by others, through  
3 its activities relating to its medical disc publishing products, including the  
4 MediaWriter product.

5           30.     PacsGear's acts of infringement have caused damage to DatCard in  
6 an amount to be determined at trial.

7           31.     PacsGear's infringement of the '157 Patent is causing irreparable  
8 harm to DatCard, for which there is no adequate remedy at law. PacsGear's  
9 infringement will continue, and will continue to cause irreparable harm to  
10 DatCard, unless PacsGear's infringement is enjoined by this Court.

11                   **FIFTH CLAIM FOR RELIEF**

12                   **INFRINGEMENT OF U.S. PATENT NO. 7,801,422**

13           32.     Plaintiff incorporates by reference and realleges each of the  
14 allegations set forth in Paragraphs 1-6 above.

15           33.     On September 21, 2010, U.S. Patent No. 7,801,422 ("the '422  
16 Patent"), entitled "System and Method for Producing Medical Image Data Onto  
17 Portable Digital Recording Media," was duly and legally issued by the United  
18 States Patent and Trademark Office. DatCard is the owner of all right and title,  
19 both legal and equitable, to the '422 Patent, and has been the owner of the '422  
20 Patent since the date of its issuance. A copy of the '422 Patent is attached  
21 hereto as Exhibit 5.

22           34.     PacsGear has directly infringed the '422 Patent at least through its  
23 manufacture, sale, offer for sale and use of its medical disc publishing products,  
24 including the MediaWriter product.

25           35.     In addition, PacsGear has contributed to infringement of the '422  
26 Patent by others, and induced infringement of the '422 Patent by others, through  
27 its activities relating to its medical disc publishing products, including the  
28 MediaWriter product.



36. PacsGear's acts of infringement have caused damage to DatCard in an amount to be determined at trial.

37. PacsGear's infringement of the '422 Patent is causing irreparable harm to DatCard, for which there is no adequate remedy at law. PacsGear's infringement will continue, and will continue to cause irreparable harm to DatCard, unless PacsGear's infringement is enjoined by this Court.

**PRAYER FOR RELIEF**

WHEREFORE, DatCard prays for judgment and seeks relief as follows:

- A. A judgment that PacsGear has infringed U.S. Patent No. 7,302,164;
- B. A judgment that PacsGear has infringed U.S. Patent No. 7,729,597;
- C. A judgment that PacsGear has infringed U.S. Patent No. 7,783,174;
- D. A judgment that PacsGear has infringed U.S. Patent No. 7,734,157;
- E. A judgment that PacsGear has infringed U.S. Patent No. 7,801,422;
- F. Preliminary and permanent injunctions against further infringement of U.S. Patent Nos. 7,302,164, 7,729,597, 7,783,174, 7,734,157, and 7,801,422, including injunctions against direct infringement, contributory infringement, and induced infringement;
- G. An award of damages for PacsGear's infringement of U.S. Patent Nos. 7,302,164, 7,729,597, 7,783,174, 7,734,157, and 7,801,422;
- H. A trebling of the award of damages under 35 U.S.C. § 284, or such other enhancement of the award of damages that the Court deems appropriate;
- I. A declaration that PacsGear's infringement of U.S. Patent No. 7,302,164 was and is willful, and that this is an exceptional case under 35 U.S.C. § 285;
- J. An award of attorneys' fees and non-taxable costs under 35 U.S.C. § 285 on account of Defendants' willful infringement;
- K. An award of taxable costs; and

///







**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff  
DatCard Systems, Inc. demands a trial by jury of all issues raised by the  
pleadings which are triable by jury.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: February 14, 2011

By: 

Craig S. Summers  
Paul A. Stewart  
David H. Chan

Attorneys for Plaintiff  
DATCARD SYSTEMS, INC.

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021411



**PROOF OF SERVICE**

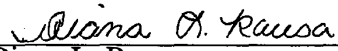
I am a citizen of the United States of America, and I am employed in Irvine, California. I am over the age of 18 and not a party to the within action. My business address is 2040 Main Street, Fourteenth Floor, Irvine, California. On February 14, 2011, I served the within **SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT - DEMAND FOR JURY TRIAL** on the parties or their counsel shown below, as indicated below and by placing it in a sealed envelope addressed as follows:

**VIA E-MAIL AND  
FIRST CLASS MAIL:**

Bill F. Holbrow  
BLAKELY SOKOLOFF TAYLOR ZAFMAN, LLP  
12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, CA 90025  
T: (310) 207-3800  
F: (310) 820-5988  
Bill\_Holbrow@bstz.com

I declare that I am employed in the office of a member of the bar of this Court at whose direction the service was made.

Executed on February 14, 2011 at Irvine, California.

  
Diana L. Rausa

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021411







1 I, Dr. Alan Rowberg, M.D., have personal knowledge of the matters set  
2 forth herein, or where indicated, based on my good faith belief and  
3 understanding, and if called upon to testify, I could and would competently  
4 testify as follows:

5 1. I have been retained as a technical expert for DataCard Systems,  
6 Inc. ("DatCard") in its lawsuit against Pacsgear, Inc. ("Pacsgear") for  
7 infringement of Datcard's U.S. Patent Nos. 7,302,164 ("the '164 patent");  
8 7,729,597 ("the '597 patent"); 7,783,174 ("the '174 patent"); 7,734,157 ("the  
9 '157 patent"); and 7,801,422 ("the '422 patent") (collectively, the "Asserted  
10 Patents").

11 2. Attached hereto as Exhibit 11 is a true and correct copy of my  
12 December 5, 2011 Rebuttal Expert Report. My report sets forth my opinions  
13 regarding the validity of the Asserted Patents and the bases therefore.

14 3. My background and qualifications are described in Exhibit A of my  
15 Initial Expert Report, a copy of which was filed on January 13, 2012.

16 4. I reaffirm under penalty of perjury that my Rebuttal Expert Report,  
17 Exhibit 11, truly and accurately sets forth my opinions regarding the validity of  
18 the Asserted Patents and the bases for those opinions. I hereby adopt and  
19 incorporate the entirety of my Rebuttal Expert Report as if set forth fully in this  
20 Declaration.

21 I declare under penalty of perjury under the laws of the United States of  
22 America that the foregoing is true and correct.

23 Executed this 13 day of January, 2012, in Shoreline, WA.

24  
25   
26 Alan Rowberg



1 Craig S. Summers (SBN 108,688)  
craig.summers@kmob.com  
2 Paul A. Stewart (SBN 153,467)  
paul.stewart@kmob.com  
3 Brian C. Claassen (SBN 253,627)  
brian.claassen@kmob.com  
4 Bridget A. Smith (SBN 253,548)  
bridget.smith@kmob.com  
5 **KNÖBBE, MARTENS, OLSON & BEAR, LLP**  
2040 Main Street, 14<sup>th</sup> Floor  
6 Irvine, CA 92614  
Telephone: (949) 760-0404  
7 Facsimile: (949) 760-9502

8 Attorneys for Plaintiff  
9 **DATCARD SYSTEMS, INC.**

10 IN THE UNITED STATES DISTRICT COURT  
11 FOR THE CENTRAL DISTRICT OF CALIFORNIA  
12 SOUTHERN DIVISION  
13

14 DATCARD SYSTEMS, INC., a  
15 California corporation,  
16 Plaintiff,

17 v.

18 PACSGEAR, INC., a California  
19 corporation,  
20 Defendant.

21 AND RELATED COUNTERCLAIM  
22

) Civil Action No.  
) SACV10-1288 DOC (VBKx)

) **REBUTTAL EXPERT REPORT**  
) **OF DR. ALAN ROWBERG, M.D.**

23 **CONFIDENTIAL ATTORNEYS' EYES ONLY**  
24 **INFORMATION ON PAGES 66, 77, 78**  
25  
26  
27  
28



1 and a viewing program that is configured to allow viewing of the selected and  
2 the related medical image data that is recorded onto the data storage medium on  
3 widely accessible computers not specifically configured with standard medical  
4 imaging software for viewing of medical images.” In fact, the Ratib article does  
5 not disclose a production station at all.

6 With respect to claims 16 and 21, the Ratib article does not disclose at  
7 least (1) “recording the selected medical image data and the related medical  
8 image data onto a data storage medium using a production station”; (2)  
9 “recording a viewing program onto the data storage medium using the  
10 production station”; and (3) “printing a label using the production station . . .  
11 and affixing the label to the data storage medium using the production station.”  
12 Again, the Ratib article does not disclose a production station at all. Moreover,  
13 while the Ratib article discloses a CD that is labeled (Ratib article at  
14 PG000052), the Ratib article does not disclose that a production station prints  
15 and affixes the label to the CD.

16 In conclusion, I believe that Dr. Horii’s conclusory and superficial  
17 analysis, which does not address the specific language of the claims, is  
18 insufficient to show that the claims of the ’164 patent would have been obvious  
19 over the Ratib article or the purported Ratib public use.

20 **6. The asserted ’164 patent claims would not have been obvious**  
21 **over Heartlab (user’s guide or product)**

22 Dr. Horii opines that “[b]oth the [Heartlab] system and its 1998 User’s  
23 Guide render all of the elements of claim 9 obvious.” (Horii Rpt. at 20.) Dr.  
24 Horii seems to contend that the Heartlab user’s guide, alone or in combination  
25 with the DICOMview Enterprise Server web page, discloses all elements of  
26 claim 9. (Horii Rpt. at 20.) However, he incorrectly paraphrases the claim  
27 elements and provides only general page citations to the Heartlab user’s guide  
28 and the DICOMview Enterprise Server web page to support his conclusion that



With respect to claim 9, Dr. Horii contends that the Heartlab system “works on multiple browsing terminals configured to receive user selection [sic] of selected medical image data.” (Horii Rpt. at 20, citing Heartlab user’s guide at PG018233 (page 11) and DICOMview Enterprise Server web page at PG024572–73 (Exhibit 206).) I believe Dr. Horii is saying that the system in Heartlab is capable of being installed and working on any terminal. That is not what claims 9 and 15 recite. Claims 9 and 15 recite a system comprising a plurality of browsing terminals configured to receive a user section that defines selected medical image data. I do not believe that the cited portions of the Heartlab user’s guide or the DICOMview Enterprise Server web page disclose this element. The Heartlab user’s guide simply discloses that DICOMview software can run “on mid-range PC or PowerPC desktop systems.” (Heartlab user’s guide at PG018233.) The DICOMview Enterprise Server web page discloses a system with a “Fault tolerant Windows NT Server” and multiple “Cath-lab” stations and “ViewStations.” The DICOMview Enterprise Server web page does not disclose, or even suggest, that any of those browsing terminals are configured to receive a user selection that defines selected medical image data, as used in the context of the claims. Thus, Dr. Horii’s conclusion that the Heartlab user’s guide or DICOMview Enterprise Server web page meets the “plurality of browsing terminals” element, as claimed, is unsupported.

Dr. Horii also opines that the Heartlab user’s guide has a “search module” that “can search the database (and other databases) for related medical images,



Dr. Horii further opines that the Heartlab user's guide has "a CD burner that loads related and selected images as well as a viewing program onto CD's, which images are viewable on computers that do not necessarily contain medical image viewing software," thus "fulfilling" the production station element recited in claim 9. (Horii Rpt. at 20, citing Heartlab user's guide at PG018244 and PG018267 (pages 22 and 45).)

The Heartlab user's guide discloses that selected images are burned to a CD, along with a program which will enable the CD to play itself back on any Windows 95/NT PC. (Heartlab user's guide at PG018267-68.) As I explained above, however, the user's guide does not disclose searching for related medical image data that is related to selected medical image data. Because there is no related medical image data in the Heartlab user's guide, it is impossible for the Heartlab user's guide to also record related medical image data onto a single, portable data storage medium or optical disk in the standard medical imaging format, as claimed. In fact, the Heartlab user's guide does not disclose a production station at all. At best, the Heartlab user's guide discloses an ordinary PC with a CD-R drive. (Heartlab user's guide at PG018233, PG018241, PG018267.)



1 With respect to claims 16 and 21, Dr. Horii states that the claimed  
 2 “method for selecting and automatically recording medical image data onto a  
 3 data storage medium” would have been “obvious for the same reasons”  
 4 discussed with respect to claim 9. (Horii Rpt. at 22.) Dr. Horii next states that  
 5 the “only new feature . . . is ‘printing a label using the production station,  
 6 wherein the label includes identifying information associated with the selected  
 7 medical image data, and affixing the label to the data storage medium using the  
 8 production station.’” (Horii Rpt. at 22.) He then ignores this claim language  
 9 and contends that “[l]abeling of CD’s is taught in . . . Heartlab” (Horii Rpt. at  
 10 22, referring to the Heartlab user’s guide), as if this somehow discloses the  
 11 “only new feature” of the claim. Dr. Horii cites to pages 74–81 of the Heartlab  
 12 user’s guide to support this proposition. That document only goes up to page 50  
 13 (Heartlab user’s guide at PG018272). I could not find anything in the Heartlab  
 14 user’s guide that disclosed labeling in the way recited in claims 16 and 21. In  
 15 any event, Dr. Horii does not explain how this purported teaching relates to the  
 16 obviousness of the claims.

17 In conclusion, I believe that Dr. Horii’s superficial and conclusory  
 18 analysis is insufficient to show that any claims of the ’164 patent would have  
 19 been obvious over the Heartlab user’s guide or the Heartlab product.

20 **7. The asserted ’164 patent claims would not have been obvious**  
 21 **over Mehta in view of Arenson, Levin, Seshadri 1990, Seshadri**  
 22 **1992, de la Huerga, or Inamura (purportedly showing**  
 23 **searching for related data)**

24 Dr. Horii contends that, “[t]o the extent Mehta does not anticipate  
 25 Claim 9, it, in combination with any of [Arenson, Levin, Seshadri 1990,  
 26 Seshadri 1992, de la Huerga, and Inamura] would render the claim obvious.  
 27 The same is true with the other anticipated claim 15.” (Horii Rpt. at 22.) Once  
 28 again, Dr. Horii fails to identify the differences between the claims and these



1 “relates generally to computer-aided product manufacture and distribution . . .”  
2 in the context of musical recordings. (Cook, PG009092 at 1:9–16.)  
3 Accordingly, I do not believe that a person of ordinary skill in the art working in  
4 the field of the invention of the ’157 patent would have looked to Cook for  
5 guidance in solving problems in the art.

6 Dr. Horii has not explained how the cited references relate to *even one*  
7 limitation of the ’157 patent claims, much less explained why the *combination*  
8 *of features* in those claims would have been obvious over the cited references.  
9 In my opinion, the claims would not have been obvious.

10 **E. The ’174 patent is not invalid**

11 Dr. Horii devotes a single sentence to an “analysis” of the alleged  
12 obviousness of the ’174 patent claims. He never analyzes the specific claim  
13 language or the portions of the references upon which he relies.

14 With respect to the ’174 patent, Dr. Horii simply opines: “The claims here  
15 are quite similar to the claims in the ’164 and ’597 patents and are anticipated  
16 (Claims 1 and 8) or rendered obvious for the same reasons.” He provides no  
17 other opinions on the ’174 patent claims.

18 Because he has not set out any particular bases for anticipation or  
19 obviousness, I can only respond to the extent that I responded, as set forth  
20 above, to the ’164 and ’597 patents. Thus, I incorporate my analysis of the ’164  
21 and ’597 patents into this section by reference. In my opinion, none of the  
22 claims of the ’174 patent is invalid for the reasons I provided above.

23 **F. The ’422 patent is not invalid**

24 Pacsgear retained both Dr. Horii and Mr. Jestice to opine on the validity  
25 of the ’422 patent. I have reviewed both of their reports and disagree with their  
26 conclusions regarding the validity of the ’422 patent. I understand that DatCard  
27 has also retained Mr. Jack Goldberg to review and opine on Mr. Jestice’s  
28 analysis. I have read Mr. Goldberg’s rebuttal report and understand it. I agree



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Craig S. Summers (SBN 108,688)  
craig.summers@kmob.com  
Paul A. Stewart (SBN 153,467)  
paul.stewart@kmob.com  
Brian C. Claassen (SBN 253,627)  
brian.claassen@kmob.com  
Bridget A. Smith (SBN 253,548)  
bridget.smith@kmob.com  
**KNOBBE, MARTENS, OLSON & BEAR, LLP**  
2040 Main Street, 14<sup>th</sup> Floor  
Irvine, CA 92614  
Telephone: (949) 760-0404  
Facsimile: (949) 760-9502  
  
Attorneys for Plaintiff/Counterdefendant  
**DATCARD SYSTEMS, INC.**

IN THE UNITED STATES DISTRICT COURT  
FOR THE CENTRAL DISTRICT OF CALIFORNIA  
SOUTHERN DIVISION

DATCARD SYSTEMS, INC., a  
California corporation,  
  
Plaintiff,

v.

PACSGEAR, INC., a California  
corporation,  
  
Defendant.

AND RELATED COUNTERCLAIM

Civil Action No.  
SACV10-1288 DOC (VBKx)

**MEMORANDUM OF POINTS  
AND AUTHORITIES IN  
SUPPORT OF DATCARD  
SYSTEMS, INC.'S MOTION FOR  
SUMMARY JUDGMENT OF  
INFRINGEMENT OF U.S.  
PATENTS 7,783,174 AND 7,734,157**

Date: February 13, 2012  
Time: 8:30 a.m.  
Ctrm: 9D

The Honorable David O. Carter



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The inventions claimed in DatCard's patents spurred many copyists, including Pacsgear, which markets its infringing MediaWriter system. DatCard brought the present action alleging infringement of five related patents in suit. By this motion, DatCard seeks summary judgment that Pacsgear's MediaWriter infringes two of those patents, the '174 and '157 Patents. Many of the claims of the '174 Patent are directed to a medical disc publisher connected to a second computer terminal. Pacsgear does not sell the second computer terminal, but directs its customers to connect the MediaWriter to other computer terminals, and the MediaWriter includes software that has no substantial use except for connecting to those additional terminals. Accordingly, for these combination claims, DatCard is seeking summary judgment of contributory infringement, rather than direct infringement. The '157 Patent, in contrast, is directly infringed by Pacsgear.

### A. Summary judgment

///







1 “a plurality of browsing terminals configured to receive a user selection that  
2 defines selected medical image data,” as recited in claim 1. Pacsgear’s  
3 customers supply this final element in accordance with Pacsgear’s instructions,  
4 using software in the MediaWriter that has no function except to facilitate the  
5 use of the MediaWriter with the claimed “plurality of browsing terminals.”  
6 Therefore, as DatCard will explain, Pacsgear contributes to the customers’  
7 infringement.

8 **A. MediaWriter customers infringe claim 1**

9 Claim 1 of the ’174 Patent is directed to a “system” comprising five  
10 elements, each of which is analyzed below:

11 (1) “a medical image server configured to receive medical  
12 image data generated by one or more imaging modalities, the  
13 medical image data being formatted in a standard medical imaging  
14 format”;

15 (2) “a database configured to store medical image data  
16 generated by the one or more imaging modalities”;

17 (3) “a plurality of browsing terminals configured to receive a  
18 user selection that defines selected medical image data”;

19 (4) “a search module configured to automatically search the  
20 database for related data based on the user selection; and”

21 (5) “a production station that is configured to record all of  
22 the following onto a data storage medium: the selected medical  
23 image data for the patient, recorded in the standard medical  
24 imaging format, the related data, and a viewing program that is  
25 configured to allow viewing of the medical image data that is  
26 recorded onto the data storage medium by a general purpose  
27 computer that is not specifically configured with medical imaging  
28 software for viewing of medical images formatted in the standard







1 image data stored in [a] way to allow for easy search and retrieval following the  
2 request of a user.” Ex. 6 at 6–7. Thus, Pacsgear would limit “database” to a  
3 collection of *images* easily *searched at a user’s request*. *Id.* This construction  
4 improperly restricts the scope of the claim and is inconsistent with the  
5 specification.

6 While statements in the specification can restrict the scope of the claims,  
7 such restriction occurs only in rare instances where the patentee “demonstrate[d]  
8 an intent to deviate from the ordinary and accustomed meaning of a claim term  
9 by including in the specification expressions of *manifest exclusion or*  
10 *restriction*, representing a *clear disavowal* of claim scope.” *Epistar*, 566 F.3d at  
11 1334 (alteration original) (emphases added). This is not one of those instances.  
12 Nothing in the patent suggests that “database” has some special or technical  
13 meaning, much less uses words of manifest exclusion or restriction to clearly  
14 disavow claim scope.

15 Furthermore, as explained above and as Pacsgear’s expert admits, in the  
16 specification, the term database encompasses both image and textual data  
17 storage. *E.g.*, Ex. 1 at 3:65–4:2, 6:1–15, 6:53–59; *see* Ex. 6 at 6. For instance,  
18 the specification describes “database” as encompassing “audit records.” Ex. 1 at  
19 6:53–59. These audit records can include textual data, such as physician and  
20 patient names. *Id.* According to the specification, a database is not necessarily  
21 “searchable at a user’s request.” For example, the specification *never* states that  
22 the database is “searchable” for audit records. Yet, it is still a database. In light  
23 of the specification, Pacsgear’s construction makes no sense.

24 Pacsgear’s construction should be rejected because it is inconsistent with  
25 the plain meaning of “database” and it is inconsistent with the specification.  
26 Database should be construed to mean, simply, a structured set of data held in a  
27 computer.

28 ///



1                   **b. The MediaWriter includes a database**

2           As explained above, this element requires a structured set of data held in a  
3 computer, configured to store medical image data generated by the one or more  
4 imaging modalities. The MediaWriter's local drive does precisely that.  
5 Specifically, the local drive of the MediaWriter's computer holds or stores  
6 (buffers) medical image data retrieved from a PACS. Ex. 2 at 25:20–26:24;  
7 Ex. 6 at 11; Ex. 7 at PG009437; Ex. 8 at PG015479; *see also* Ex. 23 at 55–56.  
8 Even Pacsgear's own specifications describe the MediaWriter's local drive as  
9 having a "database." Ex. 7 at PG009437; Ex. 8 at PG015479. Thus, the  
10 MediaWriter satisfies this limitation.

11                   **3. Customers' systems include the recited "browsing terminals"**  
12                   **and Pacsgear contributes to the customers' infringement**

13           The parties agree that nothing in the third element requires construction.  
14 *See* Ex. 6 at 7 ("the meaning of the element appears unambiguous"). This claim  
15 element requires a "plurality" or more than one browsing terminal. It appears to  
16 be undisputed that a "browsing terminal" is simply a computer terminal. *Id.*  
17 These computer terminals, as set forth in the claim, must be configured to  
18 receive input from a user that defines the medical image data that is being  
19 selected by the user.

20                   **a. Pacsgear's customers use a plurality of browsing**  
21                   **terminals**

22           Every MediaWriter includes a computer terminal that allows users to  
23 select one or more medical imaging studies. Ex. 3 at PG006765; Ex. 4 at  
24 PG006804; *see also* Ex. 23 at 56–57. After a user confirms the selection, the  
25 MediaWriter's computer searches a PACS or imaging modality for image  
26 studies that match the study or studies that have been selected by the user. Ex. 2  
27 at 42:2–17, 47:23–48:13; *see also* Ex. 23 at 57. In this way, the user's selection  
28 defines selected medical image data.



Pacsgear’s Customer Service Logs demonstrate that many customers are using the web client to access the MediaWriter through remote computer terminals. Ex. 13 (e.g., “installed mw web client,” “Contacted customer and installed MW Web Interface on his PC,” “MW Web client reinstall fixed problem,” “going to schedule a backup with him for next week to upgrade to MW 2.2 w/ webclient and new epson software,” “I also installed the new mw webclient”). Furthermore, a Pacsgear customer, Denver Health Medical Center, specifically testified that Denver Health accesses the MediaWriter web client from five different remote terminals. Ex. 14 at 17:11–18:10. Thus, Pacsgear’s customers, including Denver Health, plainly satisfy this claim limitation.

Pacsgear contributes to its customers' direct infringement. 35 U.S.C. § 271(c) provides that

-8-



DatCard has proven all four required elements by uncontroverted evidence. First, as explained throughout this motion, Pacsgear's customers using the MediaWriter with at least one other remote terminal directly infringe claim 1 of the '174 Patent. The MediaWriter includes every element of claim 1 except the plurality of browsing terminals. The MediaWriter also includes a specially designed web client interface that allows the MediaWriter to be connected to other computer terminals. Ex. 9 at PG006563, *see also* Ex. 2 at 117:12–119:8; Ex. 7 at PG009433; Ex. 8 at PG0015473; Ex. 10 at PG006593; Ex. 11 at PG002931; Ex. 12 at PG008395–97; *see also* Ex. 23 at 57. These remote terminals are configured to receive a user selection that defines selected medical image data. Ex. 11 at PG002931; Ex. 12 at PG008395–97; *see also* Ex. 23 at 57. Thus, DatCard's customers directly infringe when they connect the remote terminals to the MediaWriter. As just discussed, these customers include Denver Health and the customers listed in Pacsgear's Customer Service Log. Ex. 13; Ex. 14 at 17:11–18:10.



Thus, Pacsgear is a contributory infringer. After all, a defendant like



1 Pacsgear “who makes a special device constituting the heart of a patented  
2 [system] and supplies it to others with directions (specific or implied) to  
3 complete the [system] is obviously appropriating the benefit of the patented  
4 invention.” *Ricoh*, 550 F.3d at 1337 (quoting H.R. Rep. No. 82-1923 at 9  
5 (1952)).

6 **4. The MediaWriter includes the recited “search module**  
7 **configured to automatically search the database for related**  
8 **data based on the user selection”**

9 **a. Construction of “automatically search the database”**

10 Pacsgear advocates an absurdly narrow construction of the term  
11 “automatically.” Specifically, Pacsgear contends that “automatically” requires  
12 that the function of searching the database must occur “without asking for user  
13 direction” and “without user intervention.” Ex. 6 at 18–19, 21, 27. In  
14 Pacsgear’s view, the patent is avoided if an otherwise automated, computerized  
15 system requires the user to check a box confirming that related data should be  
16 included on the disc before initiating the search for the related data. *Id.* at 21.  
17 Similarly, in Pacsgear’s view, the patent is avoided if the user must click a  
18 “confirm” button to confirm that the system should burn a disc. *Id.* Pacsgear’s  
19 construction is inconsistent with the ordinary meaning of automatically and it  
20 violates basic tenets of claim construction.

21 In *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1235 (Fed. Cir.  
22 2005), the Federal Circuit considered the proper construction of “automatically”  
23 in a computer-implemented method. In that case, the parties’ competing  
24 constructions were almost identical to the constructions proposed here. The  
25 defendant proposed a very narrow construction similar to Pacsgear’s, arguing  
26 that automatic means “a process that occurs *without human intervention*, such  
27 that a human does not have the option to intercede and alter the flow of that  
28 process.” *Id.* (emphasis in original). The plaintiff, like DatCard here, argued











1 The specification does disclose embodiments in which “related data” are  
2 images. The law is abundantly clear, however, that claims generally should not  
3 be narrowed to cover only specific embodiments disclosed in the specification.  
4 *See e.g., Linear Tech. Corp. v. U.S. Int’l Trade Comm’n*, 566 F.3d 1049, 1058  
5 (Fed. Cir. 2009).

6 Moreover, the specification as a whole is entirely consistent with the  
7 ordinary and customary meaning of related data discussed above. The  
8 specification states that “[o]ne embodiment of the claimed system allows for  
9 searching *medical exam data that are related* and placing such data on the same  
10 CD.” Ex. 1 at 2:14–17 (emphasis added). “Medical exam data” plainly  
11 encompasses textual reports, such as reports prepared by radiologists after  
12 completing their examination of the patient’s images. In light of this broad  
13 language, the specification does not demonstrate the clear intent to disavow  
14 claim scope that is ordinarily required to restrict the scope of claims. *See*  
15 *Epistar*, 566 F.3d at 1334.

16 **c. The MediaWriter “automatically” searches for “related**  
17 **data” as required by the claim**

18 The MediaWriter is configured to search its local drive for “related data”  
19 based on the user selection. Ex. 23 at 58–59. These related data include “HL7”  
20 reports and other diagnostic reports. Ex. 2 at 34:8–35:3, 38:25–39:12; *see also*  
21 Ex. 23 at 58. Specifically, when the “Include Reports” button is selected, a  
22 Media Writer uses a unique identification number associated with the selected  
23 medical image data to search the local drive for related reports with a matching  
24 identification number. Ex. 2 at 34:8–35:3, 38:25–39:12; *see also* Ex. 23 at 58.

25 Furthermore, the MediaWriter is configured to perform this search  
26 “automatically.” A user need only select specific studies, confirm the selection,  
27 ensure the “Include Reports” button is checked, and click “Confirm.” Ex. 3 at  
28 PG006765–67; Ex. 4 at PG006804–06. When the user clicks “Confirm,” the



**5. The MediaWriter includes the recited “production station”**

**B. MediaWriter customers infringe dependent claims 2–4 and 7**

Claim 3 specifies that, in the system of claim 2, “the production station is

-15-



1 configured to produce a label for the data storage medium, the label containing  
2 the identifying information.” Ex. 1 at 9:50–52. There is also no dispute that the  
3 MediaWriter is configured to produce the recited label, because all  
4 MediaWriters are configured to produce a disc label that includes the identifying  
5 information entered into the “Notes” field. Ex. 3 at PG006768; Ex. 4 at  
6 PG006807; *see also* Ex. 23 at 64–65; Ex. 6 at 26 (providing no independent  
7 basis for non-infringement).

8 Claim 4 specifies that the system of claim 1 “further compris[es] an audit  
9 module that is configured to automatically provide an auditable trail of the  
10 selected medical image data.” Again, there is no dispute that the MediaWriter  
11 comprises the recited audit module. *See* Ex. 6 at 26 (providing no independent  
12 basis for non-infringement). All MediaWriters generate an audit log with  
13 information about each CD or DVD produced. Ex. 3 at PG006785; Ex. 4 at  
14 PG006827; *see also* Ex. 23 at 65.

15 Finally, claim 7 specifies that, in the system of claim 1, “the data storage  
16 medium is an optical disk.” There is no dispute that, in the MediaWriter, the  
17 data storage medium is an optical disk. *See* Ex. 6 at 26 (providing no  
18 independent basis for non-infringement). MediaWriters are configured to  
19 produce CDs and DVDs, which are optical disks. Ex. 3 at PG006752; Ex. 4 at  
20 PG006792; *see also* Ex. 23 at 66.

21 **IV. PACSGEAR DIRECTLY INFRINGES CLAIMS 7 AND 12**  
22 **OF THE ’157 PATENT**

23 Claims 7 and 12 of the ’157 Patent are directed to a system for  
24 (1) generating a computer-readable medium that contains a patient’s medical  
25 data, and (2) storing audit records about the computer-readable medium.  
26 DatCard’s technical experts, Dr. Alan Rowberg and Mr. Jack Goldberg, have  
27 concluded that the MediaWriter satisfies each element of claims 7 and 12 and,  
28 therefore, that it infringes the claims. In response, Pacsgear’s experts chose not



1 to rebut the evidence of infringement. Pacsgear has instead seemingly decided  
2 to rely on its invalidity argument. Summary judgment of infringement of  
3 claims 7 and 12 is therefore appropriate to narrow the issues for trial.

4 **A. Pacsgear's experts offer no noninfringement position**

5 Neither of Pacsgear's technical experts, Mr. Ian Jestice and Dr. Steven  
6 Horii, offers any noninfringement position regarding the '157 Patent. Ex. 17 at  
7 73:25–74:6; Ex. 18 at 222:3–20. In fact, Dr. Horii admitted during his  
8 deposition that the elements of the '157 Patent must be present for a CD burning  
9 system to comply with the Health Insurance Portability and Accountability Act  
10 (HIPAA).<sup>2</sup> Ex. 18 at 204:24–206:10. Accordingly, Pacsgear's technical experts  
11 have presented no noninfringement position to rebut DatCard's evidence that  
12 the MediaWriter system infringes claims 7 and 12 of the '157 Patent. Instead,  
13 Pacsgear has relied solely upon attorney argument presented in its response to  
14 DatCard's Interrogatory No. 11. Ex. 19 at 13–14.

15 **B. MediaWriter infringes claim 7**

16 Claim 7 of the '157 Patent reads as follows:

17 A system for generating a portable computer-readable  
18 medium containing medical data for a first patient, wherein the  
19 medical data for the first patient are audited based on a plurality of  
20 audit records stored in an audit database, comprising:

21 a computer-implemented interface configured to receive two  
22 or more requests for production of stored medical data related to  
23 the first patient; and

24 an image production module that is configured, for each

---

25  
26 <sup>2</sup> Confirming that Dr. Horii's opinion applies to the MediaWriter, Pacsgear's User's Manual states that the product keeps audit logs that "contain  
27 time-stamped access and action information that can be used to address HIPAA  
28 security concerns." Ex. 3 at PG006785.



request for production of stored medical data related to the patient[:]  
to produce the portable computer-readable medium  
containing the requested medical data related to the first patient,  
wherein the requested medical data comprises medical image data  
formatted in a standard medical imaging format used by a computer  
configured for viewing the medical image data; and  
upon producing the computer-readable medium, to  
automatically transmit, to the audit database, audit data that is  
specific to the computer-readable medium produced in response to  
the request for stored medical data, wherein the audit data  
comprises at least an identification specific to the computer readable  
medium, an identification of a requester of the stored medical data,  
and an identification of the first patient, and is for at least one audit  
record in the plurality of audit records in the audit database.

Pacsgear has not contested infringement with respect to the preamble of this claim. Ex. 19 at 13–14. In any event, Pacsgear’s MediaWriter clearly satisfies the preamble. Pacsgear’s User’s Manual explains that the “MediaWriter writes DICOM studies, results, and an optional viewer to CDs, DVDs, and USB flash drives.” Ex. 3 at PG006755. These CDs and DVDs are the “portable computer-readable medium” of claim 7, as explained in the following sections. They contain at least “DICOM studies,” which indisputably are “medical data.”



MediaWriter, therefore, satisfies the preamble of claim 7. Ex. 23 at 80. Pacsgear's MediaWriter also satisfies each of the remaining claim elements, as discussed in the following sections.

**1. MediaWriter includes the recited "computer-implemented interface"**

The first claim limitation is "a computer-implemented interface . . . ." Ex. 20 at 10:17–19. The parties agree that no terms in this claim element require construction. Moreover, the undisputed evidence shows that the MediaWriter satisfies this element. Ex. 23 at 81. The MediaWriter includes a "simple user interface that can be installed on any PC." Ex. 3 at PG006755. This user interface is a computer-implemented interface. A user can interact with the interface at the MediaWriter's local computer or at a remote computer through a browsing terminal, similar to accessing a website on the Internet. Ex. 23 at 81. The user interface allows a user to select multiple patient studies containing medical images and reports that are then displayed in a "burn configuration dialog box," as shown in Section 3.2 of the User's Manual. Ex. 3 at PG006767. These selections are the claimed "requests for production of stored medical data related to the first patient." Accordingly, the MediaWriter satisfies this claim element. Ex. 23 at 81.

In its Supplemental Response to DatCard's Interrogatory No. 11, Pacsgear's attorneys argue that the MediaWriter does not meet this limitation. Ex. 19 at 13–14. Pacsgear cites no evidence in support of this assertion. Neither of Pacsgear's experts adopted it. Furthermore, in the same interrogatory response, Pacsgear's attorneys admit that a MediaWriter user can burn CDs with medical images. *Id.* Pacsgear, therefore, has presented no reasonable basis to challenge MediaWriter's satisfaction of this element.

**2. MediaWriter includes the recited "image production module"**

Claim 7 next requires "an image production module . . . ." Ex. 20 at



1 10:20–22. The parties agree that no terms in this claim element require  
2 construction, and Pacsgear does not contest infringement with respect to this  
3 claim element. Ex. 19 at 13–14. Moreover, the undisputed evidence shows that  
4 the MediaWriter includes an image production module that can produce a  
5 portable computer-readable medium containing the requested data for each  
6 request for production. Ex. 3 at PG006755 (“The MediaWriter System includes  
7 a CD/DVD burner”). And the MediaWriter records the requested medical data  
8 onto a CD or DVD in the DICOM format, which is a standard medical imaging  
9 format used by a computer configured for viewing the medical image data.  
10 Ex. 23 at 81; Ex. 2 at 29:7–14, 65:10–16. Therefore, the undisputed evidence  
11 shows that MediaWriter satisfies this claim element.

12 **3. The MediaWriter image production module is configured to**  
13 **“automatically transmit . . . audit data that is specific to the**  
14 **computer-readable medium,” as recited**

15 The next disputed element of Claim 7 requires the image production  
16 module to “automatically transmit . . . audit data that is specific to the computer-  
17 readable medium.” Ex. 20 at 10:29–38. Dr. Rowberg and Mr. Goldberg  
18 independently concluded that the MediaWriter satisfies this claim element. Mr.  
19 Goldberg reviewed the MediaWriter source code and found that the  
20 MediaWriter stores two identifications specific to produced CDs or DVDs to an  
21 audit database stored on the local drive of the MediaWriter: (1) a “DiscID” in  
22 versions 4.0 and earlier, and (2) a “JobID” in all versions.<sup>3</sup> Ex. 22 at 40–45.  
23 Mr. Goldberg also found from the source code that the MediaWriter  
24

---

25 <sup>3</sup> The transmitted audit data also includes “an identification of a requester  
26 of the stored medical data,” and “an identification of the first patient,” as  
27 required by the portion of this limitation which has not been quoted in the main  
28 text. Ex. 25 at 40-45. It appears to be undisputed that MediaWriter satisfies  
these requirements. Thus, they will not be discussed further here.



**a. Construction of “identification specific to the computer-readable medium”**

To determine whether the MediaWriter’s audit data includes “an identification specific to the computer-readable medium,” the Court first must construe the terms “specific” and “computer-readable medium.”

///

///

///



1                    **i.     The computer-readable medium which stores**  
2                    **patient images may be a single disc or multiple**  
3                    **discs**

4            The “computer-readable medium” of the claim refers to the entire  
5 medium that contains the requested medical data, and not merely a single CD or  
6 DVD. The specification discloses that a suitable medium comprises CDs and  
7 DVDs — *plural* — and “any suitable portable digital recording medium can be  
8 substituted for CDs.” Ex. 20 at 3:30–41. If the requested medical data exceeds  
9 the storage capacity of a single disc, a set of discs is a suitable portable digital  
10 recording medium. The construction of “identification specific to the computer-  
11 readable medium,” therefore, should not require that each disc within a set of  
12 discs for a single job have a unique identification. Instead, the identification  
13 should be specific to the computer-readable medium as a whole: the set of discs.

14                    **ii.     “Specific” does not mean that each *duplicate copy***  
15                    **of the same disc has a unique number**

16            Pacsgear contends — solely through attorney argument — that the  
17 MediaWriter CD identification number is not an “identification specific to the  
18 computer-readable medium” because a user could burn duplicate copies of a  
19 CD, which would all have the same identification number. Ex. 19 at 13–14.  
20 Pacsgear’s contention seemingly attempts to substitute the word “unique” for  
21 the word “specific” in the claimed phrase “identification specific to the  
22 computer-readable medium.” It also ignores the ’157 Patent specification.

23            The ’157 Patent specification discloses that the audit record can include  
24 an identification number of the CD. Ex. 20 at 6:53–59. The specification also  
25 describes a separate “number of copies” value, indicating the number of copies  
26 of CDs to be produced. *Id.* at 6:23–28. If the system required that each copy of  
27 the same CD have a “unique” identification number, as Pacsgear contends, a  
28 value for the number of copies would not be needed. The specification







Pacsgear's User's Manuals, the Fed. R. Civ. P. 30(b)(6) deposition of Pacsgear, and testing of the MediaWriter also establish infringement. Ex. 23 at 15, 81–82; Ex. 21 at 41:15–43:21. The User's Manual at Section 9.1 shows the user interface for the MediaWriter's "audit logs." Ex. 3 at PG006785. It describes that the "audit logs contain messages that accumulate during product use." *Id.* Pacsgear's 30(b)(6) deponent testified that the audit log "records the user that was logged into the MediaWriter at the time the disk was made, some patient identifying information, the patient name and medical record number, the accession number which identifies the study, and then a job number, a time stamp." Ex. 2 at 71:20–72:4. The job number, in particular, specifically identifies the computer readable medium. It identifies each completed burn of a CD or DVD (or a set of CDs or DVDs) based on a user request. The job number therefore specifically identifies the disc or set of discs on which the patient's information was recorded. Ex. 23 at 81–82. In addition, version 4.0 and earlier of the MediaWriter also included a disc identification number that specifically identified the medium on which the patient's information was recorded. *Id.* This, too, satisfies this claim element. *Id.*

# A 1419







1 Craig S. Summers (SBN 108,688)  
craig.summers@kmob.com  
2 Paul A. Stewart (SBN 153,467)  
paul.stewart@kmob.com  
3 Brian C. Claassen (SBN 253,627)  
brian.claassen@kmob.com  
4 Bridget A. Smith (SBN 253,548)  
bridget.smith@kmob.com  
5 **KNÖBBE, MARTENS, OLSON & BEAR, LLP**  
2040 Main Street, 14<sup>th</sup> Floor  
6 Irvine, CA 92614  
Telephone: (949) 760-0404  
7 Facsimile: (949) 760-9502  
8 Attorneys for Plaintiff/Counterdefendant  
9 **DATCARD SYSTEMS, INC.**

10 IN THE UNITED STATES DISTRICT COURT  
11 FOR THE CENTRAL DISTRICT OF CALIFORNIA  
12 SOUTHERN DIVISION  
13

14 DATCARD SYSTEMS, INC., a  
15 California corporation,  
16 Plaintiff,

17 v.

18 PACSGEAR, INC., a California  
19 corporation,  
20 Defendant.

21 AND RELATED COUNTERCLAIM  
22  
23  
24  
25  
26  
27  
28

) Civil Action No.  
) SACV10-1288 DOC (VBKx)

) **DECLARATION OF PAUL A.**  
) **STEWART IN SUPPORT OF**  
) **DATCARD SYSTEMS, INC.'S**  
) **MOTION FOR SUMMARY**  
) **JUDGMENT OF INFRINGEMENT**  
) **OF U.S. PATENTS 7,783,174 AND**  
) **7,734,157**

) Date: February 13, 2012  
) Time: 8:30 a.m.  
) Ctrm: 9D

) The Honorable David O. Carter



1 I, Paul A. Stewart, declare as follows:

2 1. I am a partner with the law firm of Knobbe, Martens, Olson &  
3 Bear, LLP, and one of the attorneys representing Plaintiff / Counterdefendant  
4 DatCard Systems, Inc. ("DatCard"). I have personal knowledge of the matters  
5 set forth herein and if called upon to testify, I could and would testify  
6 competently to them.

7 2. I am providing this declaration in support of DatCard's Motion for  
8 Summary Judgment of Infringement of U.S. Patents 7,783,174 and 7,734,157.

9 3. Attached hereto as Exhibit 1 is a true and correct copy of U.S.  
10 Patent 7,783,174.

11 4. Attached hereto as Exhibit 2 are true and correct copies of selected  
12 pages from the transcript of the deposition of Brian Cavanaugh taken on August  
13 16, 2011.

14 5. Attached hereto as Exhibit 3 is a true and correct copy of the  
15 Pacsgear MediaWriter 3.0 CD/DVD Burning Solution User's Manual bearing  
16 Bates Nos. PG006752-6791.

17 6. Attached hereto as Exhibit 4 is a true and correct copy of the  
18 Pacsgear MediaWriter 4.0 CD/DVD Burning Solution User's Manual bearing  
19 Bates Nos. PG006792-6831.

20 7. Attached hereto as Exhibit 5 is a true and correct copy of select  
21 pages from The Compact Oxford English Dictionary of Current English, 2nd ed.  
22 2002.

23 8. Attached hereto as Exhibit 6 is a true and correct copy of the  
24 December 6, 2011 Rebuttal Report of Steven Horii, M.D. without exhibits.

25 9. Attached hereto as Exhibit 7 is a true and correct copy of the  
26 Pacsgear MediaWriter 3.0 Software Requirements Specification dated April 13,  
27 2010, bearing Bates Nos. PG009428-9453.

28 ///



1 10. Attached hereto as Exhibit 8 is a true and correct copy of the  
2 Pacsgear MediaWriter 4.0 Software Requirements Specification dated March  
3 11, 2011, bearing Bates Nos. PG015468-15496.

4 11. Attached hereto as Exhibit 9 is a true and correct copy of a  
5 MediaWriter data sheet bearing Bates Nos. PG006562-6563.

6 12. Attached hereto as Exhibit 10 is a true and correct copy of the  
7 MediaWriter Comparison Guide bearing Bates No. PG006593.

8 13. Attached hereto as Exhibit 11 is a true and correct copy of  
9 MediaWriter 4.0 Customer Release Notes dated March 14, 2011, bearing Bates  
10 Nos. PG002929-2934.

11 14. Attached hereto as Exhibit 12 is a true and correct copy of a  
12 Pacsgear document, Installing MediaWriter Web Client, bearing Bates Nos.  
13 PG008395-8397.

14 15. Attached hereto as Exhibit 13 are true and correct copies of selected  
15 pages from Pacsgear Customer Service Logs, which were produced by Pacsgear  
16 as native files on a CD bearing Bates No. PG025872.

17 16. Attached hereto as Exhibit 14 are true and correct copies of selected  
18 pages from the transcript of the Rule 30(b)(6) deposition of Marsha  
19 Kitisrivorapan of Denver Health Medical Center taken on December 22, 2011.

20 17. Attached hereto as Exhibit 15 is a true and correct copy of an email  
21 from Thomas Pickard to Brian Cavanaugh and Chris Barnett dated August 18,  
22 2010, bearing Bates No. PG010935.

23 18. Attached hereto as Exhibit 16 is a true and correct copy of a letter  
24 dated September 15, 2010, from me to Michael J. Mallie and Willmore  
25 Holbrow.

26 19. Attached hereto as Exhibit 17 are true and correct copies of selected  
27 pages from the transcript of the deposition of Ian Jestice taken on December 13,  
28 2011.









# User's Manual

## MediaWriter 3.0 CD/DVD Burning Solution

PACSGEAR™

PACSGEAR  
7020 Koll Center Parkway, Suite 100  
Pleasanton, CA 94566 USA  
T +1 925 846 9600  
F +1 925 846 0435  
support@pacsgear.com  
www.pacsgear.com

**PG006752**  
**EXHIBIT 3**



## MediaWriter

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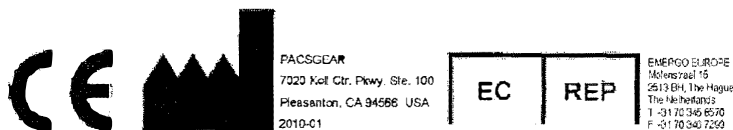
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Printed: 2010 in Pleasanton, CA, USA

### Indications for Use

MediaWriter is intended to be used by authorized staff to create DICOM CDs/DVDs/USB flash drives. These media can contain imaging studies, reports and related patient information. Operations used to create the media include patient selection, study confirmation, label customization, and DICOM configuration.



PG006753

EXHIBIT 3





MediaWriter | iii  
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MediaWriter | 1

## 1 Welcome



Congratulations on adding **MediaWriter™** to your PACS/EHR system.

**MediaWriter** writes DICOM studies, results, and an optional viewer to CDs, DVDs, and USB flash drives. The **MediaWriter** System includes a CD/DVD burner with a built-in media label printer that prints color labels directly to disc. **MediaWriter** includes additional features to scan documents, create electronic forms, and import multimedia files.

**MediaWriter** features include:

- A simple user interface that can be installed on any PC.
- Support for LDAP/Active Directory, providing single sign-on convenience.
- Support for IHE PDI workflow.

**For more information, please contact us:**

### **Americas, Asia, Oceania**

PACSGEAR  
7020 Koll Center Parkway, Suite 100  
Pleasanton, CA 94566 USA  
T +1 925 846 9600  
F +1 925 846 0435  
support@pacsgear.com  
www.pacsgear.com

### **Europe, Middle East, Africa, Russia**

PACSGEAR  
Balanstrasse 73  
81541 Munich, Germany  
T +49 (0)89 45 08 07 600  
F +49 (0)89 45 08 07 605  
support@pacsgear.com  
www.pacsgear.com





## 4 Printing Labels on Media

Printing labels requires a CD/DVD burner with a built-in printer. The burner/printer allows you not only to store DICOM studies on an external media such as a CD, but also to print text and images (a "label") directly onto that medium at the same time. Labels can consist of a logo or other image plus seven lines of text of up to fifty characters each. To create a label, perform the following procedure.

1. Click *Settings > Disc Label*.

The image shows a screenshot of the "Disc Label Configuration" dialog box. It has a title bar with a close button. Inside, there is a "Disc Label" checkbox which is checked. To the right of this checkbox is a "Preview" button. Below the checkbox, there are several input fields and buttons. The "Site Logo" field contains "C:\Documents and Settings\pacsgea\Desktop\..." and has a "Browse" button to its right. The "Background Image" field also contains "C:\Documents and Settings\pacsgea\Desktop\..." and has a "Browse" button to its right. The "Site Information" section has three text fields: the first contains "7020 Koll Center Pkwy", the second contains "Pleasanton, CA 94566", and the third is empty. To the right of these fields is a "Color..." button. Below the "Site Information" fields is a "Printer" field containing "EPSON". At the bottom of the dialog is a "Custom Labels" section. It contains two rows: "Label 1" with the text "PACSGEAR" and a "Color..." button, and "Label 2" with the text "MediaWriter" and a "Color..." button. At the very bottom of the dialog are "OK" and "Cancel" buttons.

Figure 4.1 Disc Label Configuration dialog box

2. Make selections and type in text as needed according to the descriptions below, and then click **OK**.





## Disc Label

Select the **Disc Label** check box to turn ON printing of labels.

## Site Logo

In the **Site Logo** box, type the path and file name to the desired image file (typically, the logo of the medical institution). Or, click **Browse**, then navigate to the image file, select it, and click **Open**. When printing the label, **MediaWriter** will size the image automatically and place it in the top center of the medium.

## Background Image

In the **Background Image** box, type the path and file name to the desired image file, or click **Browse**, then navigate to the image file, select it, and click **Open**. When printing the background image, **MediaWriter** will size the image automatically to so that the width and height of the image match—as closely as possible—the diameter of the disc medium (see the example under Print Preview below).

## Site Information

Under **Site Information**, type up to fifty characters in each box. This text will appear in the top center of the media, just below the site logo.

## Printer

In the **Printer** box, type the name assigned to the printer. If no printer is installed, **NONE** is displayed and the box is dimmed.

## Label 1 and Label 2

Labels 1 and 2 are printed on the left side of the medium every time a medium is printed. Note that these labels differ from the Notes in the burn confirmation dialog box, which only appear on a per-job basis.

In the **Label 1** and **Label 2** boxes, type up to fifty characters each.

## Color Buttons

You can specify a text color for the site information and custom labels.

1. Click the **Color** button corresponding to the text whose color you wish to change. A standard Windows color selection dialog box appears.
2. Click the desired color, then click **OK**. The text appears in the selected color, both in the dialog box and in the print preview screen.





## Print Preview

In the **Disc Label Configuration** dialog box, click **Preview**. A window appears containing a preview of the disc label that you configured. This label will be printed on the media whenever you burn studies.

Note that some information other than that entered by the user is also printed on the media including the patient name, DOB, MRN, study creation date and time, the station ID, Disc ID, exam dates, types, and body parts.

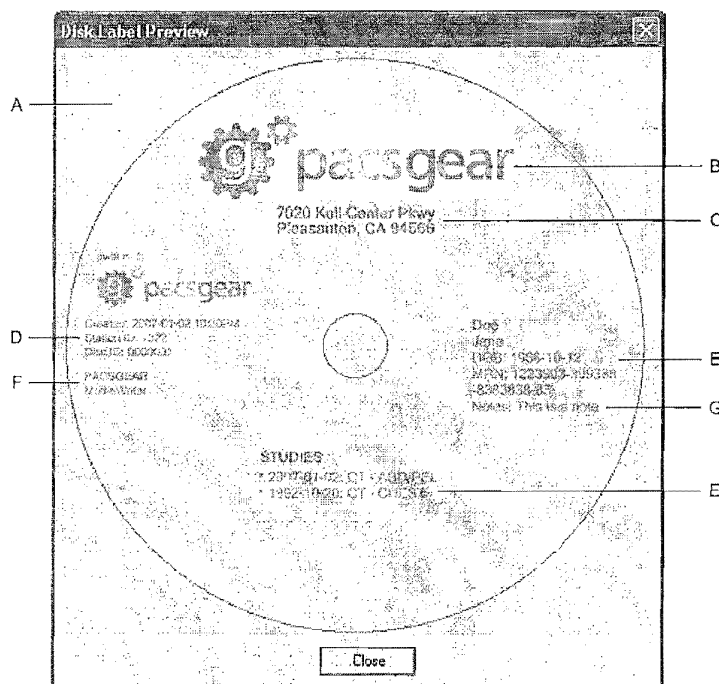


Figure 4.2 Print Preview screen

- A Background image
- B Site logo
- C Site information
- D Printed automatically (not editable by the user)
- E Preview window displays examples (only) of various study information
- F Custom labels (from Disc Label Confirmation dialog box)
- G Notes (from Burn Confirmation dialog box)



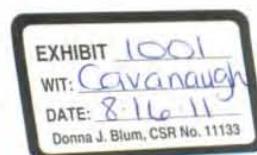


# User's Manual

MediaWriter 4.0 CD/DVD Burning Solution

PACSGEAR™

PACSGEAR  
4309 Hacienda Drive, Suite 500  
Pleasanton, CA 94588 USA  
T +1 925 225 6100  
F +1 925 225 6195  
support@pacsgear.com  
www.pacsgear.com



PG006792

EXHIBIT 4



## MediaWriter

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Printed: 2011 in Pleasanton, CA, USA

### Use of Fictitious Patient Data

Patient demographics appearing in this manual are examples only. No actual patient study data were used in the preparation of this manual. Any similarities to persons living or deceased is purely coincidental.

### Indications for Use

MediaWriter is intended to be used by authorized staff to create DICOM CDs/DVDs/USB flash drives. These media can contain imaging studies, reports and related patient information. Operations used to create the media include patient selection, study confirmation, label customization, and DICOM configuration.



PG006793

EXHIBIT 4





MediaWriter  
Contents

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MediaWriter



## 1 Welcome



Congratulations on adding MediaWriter™ to your PACS/EHR system.

MediaWriter writes DICOM studies, results, and an optional viewer to CDs, DVDs, and USB flash drives. The MediaWriter System includes a CD/DVD burner with a built-in media label printer that prints color labels directly to disc. MediaWriter includes additional features to scan documents, create electronic forms, and import multimedia files.

### New Features for MediaWriter 4.0

- **GEARView™ Basic**, a DICOM study and report viewer from PACSGEAR, is now included during installation. The installation program does not change the default viewer configuration, but adds **GEARView Basic** as a viewing option. For new installations, **GEARView Basic** is installed as the standard viewer.
- A new advanced labeling option provides greater control over backgrounds and text placement. Sample background templates are included, and custom backgrounds are available for a small fee. Contact PACSGEAR Sales for details.
- MediaWriter 4.0 supports Windows 7 for all CD/DVD burners except Rimage. Customers with Rimage publishing solutions should continue to use MediaWriter 3.0.4.
- For increased ease-of-use, the audit log can now be exported as a text (.csv) file.
- Reduce the number of images auto-burned to CD/DVD with image-level filtering by DICOM tag. Contact PACSGEAR Support for details.
- For enhanced security, the MediaWriter Report Server can now store encrypted reports. Contact PACSGEAR Support for details.
- Adobe® PDF files can be auto-burned to CD/DVD when placed in a selected folder. Contact PACSGEAR Support for details.

For more information, please contact us:

#### Americas, Asia-Pacific

PACSGEAR  
4309 Hacienda Drive, Suite 500  
Pleasanton, CA 94566 USA  
T +1 925 225 6100  
F +1 925 225 6195  
support@pacsgear.com  
www.pacsgear.com

#### Europe, Middle East, Africa, Russia

PACSGEAR  
Balanstrasse 73  
81541 Munich, Germany  
T +49 (0)89 450 807 600  
F +49 (0)89 450 807 605  
support@pacsgear.com  
www.pacsgear.com

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PG006795

EXHIBIT 4





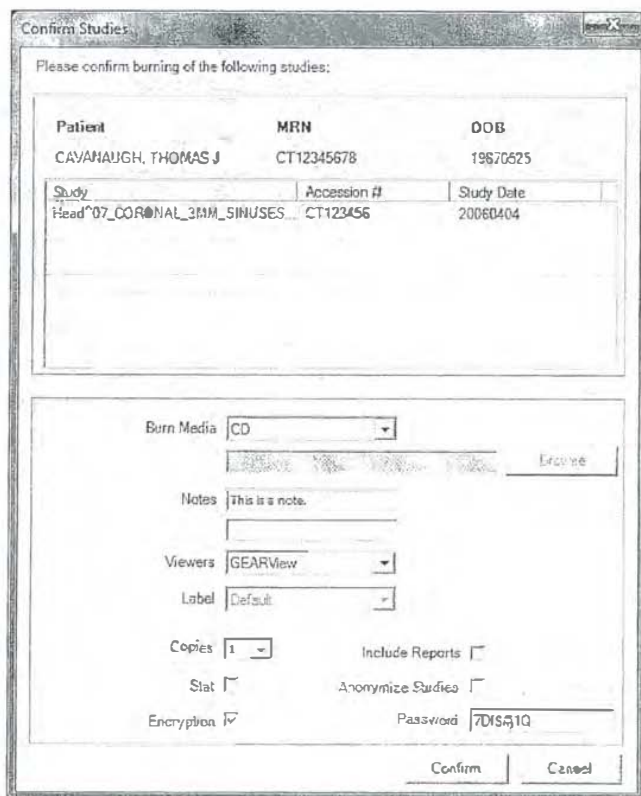
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### 3.2 Burning Selected Studies to a Medium (Single Patient)

- 1 Click Burn Studies.

**Burn Studies***Burn Studies button*

The burn confirmation dialog box appears.



Confirm Studies

Please confirm burning of the following studies:

Patient	MRN	DOB
CAVANAUGH, THOMAS J	CT12345678	19670525

Study	Accession #	Study Date
Head^07_CORONAL_3MM_SINUSES	CT123456	20060404

Burn Media:

Notes:

Viewers:

Label:

Copies:  ☐ Include Reports

☐ Stat ☐ Anonymize Studies

☒ Encryption  Password

Figure 3.2 Burn confirmation dialog box

- 2 Enter the settings below as needed, then click Confirm.

MediaWriter begins burning the selected studies to the media, and adds a job to the Current Jobs tab (below) in the bottom part of the main screen.



**Burn Media**

Select the type of media on which to burn the studies. MediaWriter supports the following media types: CD (standard CD-ROMs), DVD SINGLE (single-sided DVDs), DVD DUAL (dual-sided DVDs), and USB MEDIA (such as USB memory sticks).

**Browse**

When USB MEDIA is selected under Burn Media, the box to the left of this button contains the path to the USB media device. If necessary, click **Browse** to change the path.

**Notes**

Enter descriptions or other information to physically print on the media for the current burning job. You can enter up to sixteen characters in the first box, and up to fifteen characters in the second box. Note that these "Notes" differ from the "Custom Labels" in the Disc Label Configuration dialog box, which apply to all burning jobs. The notes boxes are dimmed if the Advanced Label option is selected in the Disc Label dialog box.

**Viewers**

Select the viewer that will display the studies. PACSGEAR's **GEARView Basic** is a viewer program that allows physicians and patients to open DICOM studies on standard PCs without the need for high-end PACS hardware or software. If needed, you can burn the **GEARView Basic** viewer onto the media at the same time as the studies. MediaWriter also supports a variety of other viewers. Please contact your sales representative for more details.

**Label**

Select the label to be printed onto the media. The list only contains labels that are selected as *Published* in the Disc Label Configuration dialog box, and is dimmed if the Simple Label option in that dialog box is selected.

**Copies**

Select the number of copies to burn. Each copy is burned separately.

**Include Reports**

This check box is only available when the Enable Reports check box is selected in the Reports configuration dialog box. When selected, MediaWriter adds reports to the burn job.

**Stat**

Select this check box to have MediaWriter perform the burn job immediately (before any others that may be listed in the Current Jobs tab).

**Anonymize Studies**

Select to omit the following information from the studies: patient name, MRN, referring physician, physician of record, performing physician, reading physician, operator, birth time, and institution.

**Encryption**

Select the check box to encrypt the studies on the medium. This check box is only available if the Enable Encryption check box is selected in the Encryption Configuration dialog box. If Force Encryption was selected in that dialog box, the Encryption check box is selected and dimmed.

**Password**

Enter a password to be required for viewing studies. This box is only available if the Enable Encryption check box is selected in the Encryption Configuration dialog box. If Auto was selected in that dialog box, the Password box is filled automatically with a random password.

**Note**

Be sure to write down the password before burning studies.





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## 4 Printing Labels on Media

### 4.1 Simple Labels

Printing labels requires a CD/DVD burner with a built-in printer. The burner/printer allows you not only to store DICOM studies on an external media such as a CD, but also to print text and images (a "label") directly onto that medium at the same time. There are two kinds of labels, *Simple* and *Advanced*. Simple labels can consist of a logo or other image plus seven lines of text of up to fifty characters each. To create a simple label, perform the procedure below. For information on advanced labels, see section 4.2, Advanced Labels.

- 1 Click *Settings > Disc Label*.

The screenshot shows the 'Disc Label Configuration' dialog box with the 'Simple Label' group selected. The 'Disc Label' checkbox is checked. The 'Printer' dropdown is set to 'DUET400'. The 'Simple Label' group contains the following fields:

- Site Logo:** A text field containing 'AR Data & Utilities\PacsgearLogo\_small.bmp' and a 'Browse' button.
- Background Image:** A text field containing 'C:\Users\Todd\Desktop\PACSGEAR Data &' and a 'Browse' button.
- Site Information:** A text field containing 'PACSGEAR' and a 'Color' button.
- Address:** Two text fields containing '4309 Hacienda Drive' and 'Pleasanton, CA 94588'.
- Label 1:** A text field containing 'Label 1 here' and a 'Color' button.
- Label 2:** A text field containing 'Label 2 here' and a 'Color' button.
- Preview:** A button at the bottom right.

Figure 4.1 The Simple Label group of the Disc Label Configuration dialog box

- 2 Type or select settings as needed according to the descriptions below, and then click OK.



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**Disc Label**

Select the **Disc Label** check box to turn ON printing of labels.

**Printer**

Displays the name of the printer selected in the Burner Configuration dialog box.

**Simple Label**

Select to print a simple label. Select *Advanced* to print an advanced label.

**Site Logo**

In the *Site Logo* box, type the path and file name to the desired image file (typically, the logo of the medical institution). Or, click **Browse**, then navigate to the image file, select it, and click **Open**. When printing the label, **MediaWriter** will size the image automatically and place it in the top center of the medium.

**Background Image**

In the *Background Image* box, type the path and file name to the desired image file, or click **Browse**, then navigate to the image file, select it, and click **Open**. When printing the background image, **MediaWriter** will size the image automatically so that the width and height of the image match—as closely as possible—the diameter of the disc medium (see the example under "Preview" below).

**Site Information**

Under *Site Information*, type up to fifty characters in each box. This text will appear in the top center of the media, just below the site logo.

**Label 1 and Label 2**

Labels 1 and 2 are printed on the left side of the medium every time a medium is printed. Note that these labels differ from the Notes in the Burn confirmation dialog box, which only appear on a per-job basis.

In the *Label 1* and *Label 2* boxes, type up to fifteen characters each.

**Color Buttons**

You can specify a text color for the site information and custom labels.

1. Click the **Color** button corresponding to the text whose color you wish to change. A standard Windows color selection dialog box appears.
2. Click the desired color, then click **OK**. The text appears in the selected color, both in the dialog box and in the print preview screen.

**Preview**

In the *Simple Label* group, click **Preview**. A window appears containing a preview of the disc label that you configured. This label will be printed on the media whenever you burn studies.

Note that some information other than that entered by the user is also printed on the media including the patient name, DOB, MRN, study creation date and time, the station ID, Disc ID, exam dates, types, and body parts.





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Figure 4.2 Print Preview screen

- A Background image
- B Site logo
- C Site information
- D Printed automatically (not editable by the user)
- E Preview window displays examples (only) of various study information
- F Custom labels (from Disc Label Confirmation dialog box)
- G Notes (from the Burn confirmation dialog box)



## 4.2 Advanced Labels

In contrast to simple labels, advanced labels offer the user more freedom and detail in design. To create an advanced label, perform the procedure below.

### Procedure

- 1 Click *Settings > Disc Label*.  
The Disc Label Configuration dialog box appears.

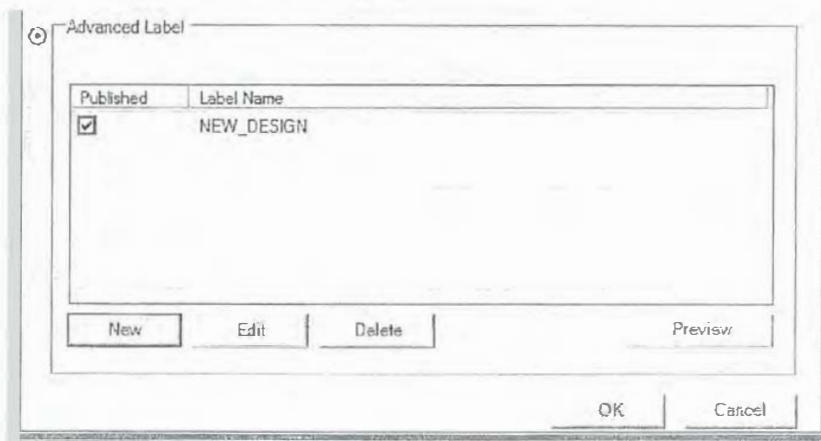


Figure 4.3 Advanced Label group of the Disc Label Configuration dialog box

- 2 Select the *Advanced Label* option.
- 3 Click *New* to display the *Select Template* dialog box. Select a template and click *OK*.  
Alternately, you can select an existing label in the *Label Name* list above and click *Edit*.
- 4 Follow the instructions below under "Label Designer."

### Publishing an Advanced Label

*Publishing* an advanced label means to make it available in the *Label* lists of the DICOM settings dialog box, and the Burn Confirmation dialog boxes for single and multiple patients. To publish one or more labels, select the corresponding check boxes as shown in the figure above.

### Print Preview

Select a label and click *Preview*. The preview is similar to the one for simple labels, but its contents consist only of items you specified in the *Label Designer*.





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### Label Designer

The label designer contains powerful tools for creating advanced (customized) labels. Use the tools described below to create your label, then save your design and close the designer using the Exit tool bar button.

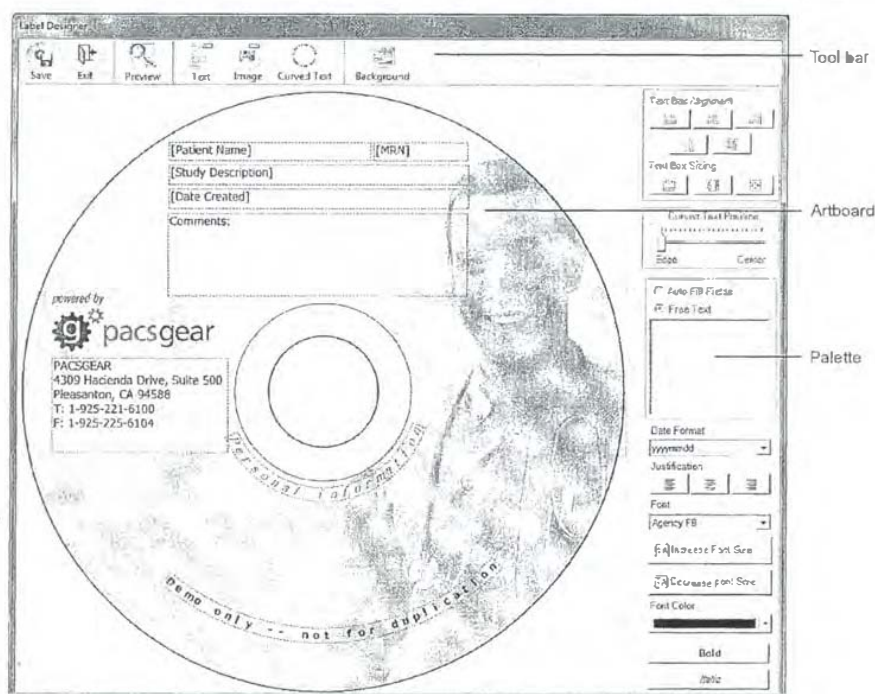


Figure 4.4 Label Designer

### Tool Bar

Use the tool bar to add new items to the label, and to preview and save your work. The tool bar contains the following tools.

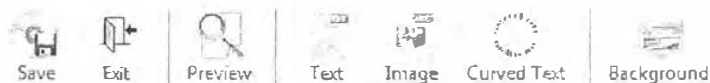


Figure 4.5 Tool bar on the Label Designer

#### Save

Click to name and save your label. The name will appear in the Disc Label Configuration dialog box the next time it is opened.

#### Exit

Click to close the label designer and return to the disc label configuration dialog box.



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## 5 Burning Reports

MediaWriter can include DICOM structured reports when burning studies to media. To start using this function, click *Settings > Reports*. The Reports Configuration dialog box appears. Enter settings as described below, then click OK.

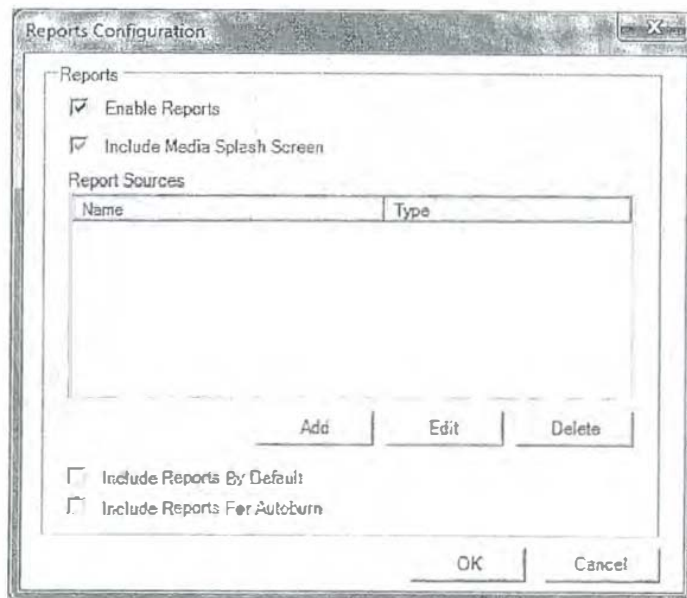


Figure 5.1 Reports configuration dialog box

### Enable Reports

Select to turn the report burning function ON and OFF. When selected, an "Include Reports" check box appears in the the Burn Confirmation dialog box.

### Include Media Splash Screen

Adds a splash screen to the report.

### Include Reports By Default

Select to automatically include reports in burn jobs unless the user removes them. When selected, the "Include Reports" check box in the Burn Confirmation dialog box is selected.

### Include Reports For Autoburn

Select to include reports when using the Autoburn function.



COPY

1 Craig S. Summers (SBN 108,688)  
craig.summers@kmob.com  
2 Paul A. Stewart (SBN 153,467)  
paul.stewart@kmob.com  
3 Brian C. Claassen (SBN 253,627)  
brian.claassen@kmob.com  
4 Bridget A. Smith (SBN 253,548)  
bridget.smith@kmob.com  
5 **KNOBBE, MARTENS, OLSON & BEAR, LLP**  
2040 Main Street, 14<sup>th</sup> Floor  
6 Irvine, CA 92614  
Telephone: (949) 760-0404  
7 Facsimile: (949) 760-9502

8 Attorneys for Plaintiff/Counterdefendant  
9 **DATCARD SYSTEMS, INC.**

10 IN THE UNITED STATES DISTRICT COURT  
11 FOR THE CENTRAL DISTRICT OF CALIFORNIA  
12 SOUTHERN DIVISION  
13

14 **DATCARD SYSTEMS, INC., a**  
15 **California corporation,**

16 Plaintiff,

17 v.

18 **PACSGEAR, INC., a California**  
19 **corporation,**

20 Defendant.

21 **AND RELATED COUNTERCLAIM**  
22  
23  
24

Civil Action No.  
SACV10-1288 DOC (VBKx)

CONFIDENTIAL EXHIBITS 2, 6,  
7, 8, 13, 15, 17 AND 19 TO THE  
DECLARATION OF PAUL A.  
STEWART IN SUPPORT OF  
DATCARD SYSTEMS, INC.'S  
MOTION FOR SUMMARY  
JUDGMENT OF INFRINGEMENT  
OF U.S. PATENTS 7,783,174 AND  
7,734,157

Date: February 13, 2012  
Time: 8:30 a.m.  
Ctm: 9D

The Honorable David O. Carter

25  
26 **CONFIDENTIAL – OUTSIDE COUNSEL ONLY**  
27 **FILED UNDER SEAL PURSUANT TO 2/09/11 PROTECTIVE ORDER**  
28



1 UNITED STATES DISTRICT COURT  
2 CENTRAL DISTRICT OF CALIFORNIA  
3 SOUTHERN DIVISION  
4  
5 DATCARD SYSTEMS, INC., a )  
6 California corporation, )  
7 )  
8 Plaintiff, )  
9 )  
10 V. ) Case No.  
11 ) SACV10-1288 DOC(VBKx)  
12 PACSGEAR, INC., a California )  
13 corporation, )  
14 Defendant. )  
15 )  
16 PACSGEAR, INC., a California )  
17 corporation, )  
18 )  
19 Counter-Claimant, )  
20 )  
21 V. )  
22 )  
23 DATCARD SYSTEMS, INC., a )  
24 California corporation, )  
25 )  
26 Counter-Defendant. )  
27 )

18 CONFIDENTIAL - ATTORNEY'S EYES ONLY  
19 VIDEOTAPED DEPOSITION OF 30(b)(6) witness,  
20 BRIAN CAVANAUGH, taken on behalf of Plaintiff,  
21 at Knobbe Martens Olson & Bear, LLP, 333 Bush  
22 Street, 21st Floor, San Francisco, California,  
23 commencing at 9:06 a.m., Tuesday, August 16,  
24 2011, before Donna J. Blum, Certified Shorthand  
25 Reporter, No. 11133.







**CONFIDENTIAL MATERIAL OMITTED  
PURSUANT TO PROTECTIVE ORDER**

**A 1632, A1633, A1637, A 1638, A 1639, A 1640, A 1641**



**REBUTTAL EXPERT REPORT OF STEVEN HORII, M.D.**

**In the Matter of DatCard Systems, Inc. v. PacsGear, Inc.**

**United States District Court For The Central District Of California**

**Case No.: SACV10-1288 DOC (VBKx)**

**[OUTSIDE COUNSEL ONLY – PURSUANT TO PROTECTIVE ORDER]**

**I. SUBJECT MATTER**

I have been engaged by counsel for Defendant PACSGEAR to review and comment on the expert report of Alan Rowberg, M.D., specifically as to the '164 Patent, the '597 Patent and the '174 Patent; although some of my comments may be applicable to other patents and related reports.

**II. QUALIFICATIONS**

I am Professor of Radiology at the University of Pennsylvania School of Medicine. My complete C.V. is attached as **Exhibit 1**.

I received my M.D. from the New York University School of Medicine in 1976. I became board-certified in diagnostic radiology in 1980 and joined the faculty at N.Y.U., where I earned the rank of Associate Professor with Tenure.

I left NYU in 1988 to become Clinical Director of the Image Management and Communications Section in the Radiology Department at Georgetown University. My principal responsibility was as a radiologist and information technology expert for the Digital Imaging Network Systems (DINS) project. This project was the proof-of-concept for filmless radiology in support of teleradiology and battlefield care and was funded by the United States Army Medical Research and Development Command. The project culminated in the testing of filmless







Willmore F. Holbrow, III (SBN#169688)  
 Bill\_Holbrow@bstz.com  
 Dennis G. Martin (SBN# 54060)  
 dennis\_martin@bstz.com  
 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP  
 12400 Wilshire Boulevard, Seventh Floor  
 Los Angeles, California 90025  
 Tel: (310) 207-3800  
 Fax: (310) 820-5988  
 Attorneys for Defendant PACSGEAR, INC.

UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA  
SOUTHERN DIVISION

DATCARD SYSTEMS, INC., a California corporation ) CASE NO. SACV 10-1288 DOC (VBKx)  
 )

Plaintiff,

Case Assigned to: Judge David O. Carter

VS

PACSGEAR, INC., a California corporation )  
Defendant. )

) **RESPONSES TO**  
) **INTERROGATORIES NOS. 1, 8**  
) **AND II PROPOUNDED BY**  
) **PLAINTIFF**

PACSGEAR, INC., a California corporation.

### Counter-Claimaint.

*Designated Confidential - Attorney's Eyes  
Only Pursuant to Protective Order*

v.

DATCARD SYSTEMS, INC., a California corporation,

### Counter-Defendant.

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendant PACSGEAR, INC. (hereinafter "PACSGEAR") hereby supplements its responses to Plaintiff DATCARD SYSTEMS,

EXHIBIT 1004  
WIT: Cavanagh  
DATE: 8.16.11  
Donna J. Blum, CSR No. 11133



**CONFIDENTIAL MATERIAL OMITTED  
PURSUANT TO PROTECTIVE ORDER**

## A1788, A1789



# CERTIFICATE OF SERVICE

I certify that on November 8, 2013, this NONCONFIDENTIAL JOINT APPENDIX [Volume I of II, Pages A1 – A1789] was filed electronically using the CM/ECF system, which will send notification of such filing to counsel of record for Defendant-Appellee, Pacsgear, Inc., as follows:

Willmore F. Holbrow, III  
Dennis G. Martin  
James H. Ahn  
BLAKELY SOKOLOFF TAYLOR ZAFMAN, LLP  
12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, CA 90025  
Telephone: (310) 207-3800  
Facsimile: (310) 820-5988  
bill\_holbrow@bstz.com  
dennis\_martin@bstz.com  
james\_ahn@bstz.com

/s/ Paul A. Stewart

Paul A. Stewart